PHYSICAL ASSESSMENT OF PRIVATE SCHOOLS
RESPONSE TO THE DAMAGES INCURRED BY THE BEIRUT PORT EXPLOSIONS

October 2020
UN-HABITAT acknowledges the support of Frontline Engineers in co-coordinating and facilitating the field technical assessment. The work of the senior and junior level engineering volunteers in conducting the assessment and translating it into itemized specific measured quantities is also recognized.

UN-HABITAT LEBANON

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TABLE OF CONTENTS

PARTNERS .................................................................................................................................................. 1
CREDITS & ACKNOWLEDGEMENTS ........................................................................................................... 1
    UN-Habitat Lebanon ................................................................................................................................ 1
    Frontline Engineers ................................................................................................................................ 1
TABLE OF CONTENTS .................................................................................................................................. 2
LIST OF FIGURES ........................................................................................................................................ 2
EXECUTIVE SUMMARY .............................................................................................................................. 3
INTRODUCTION ............................................................................................................................................ 4
    Background and context .............................................................................................................................. 4
    Purpose ...................................................................................................................................................... 4
METHODOLOGY ........................................................................................................................................... 4
    Pre-assessment stage ................................................................................................................................. 4
    Assessment stage ..................................................................................................................................... 5
    Post-assessment stage .............................................................................................................................. 5
MAIN CHALLENGES .................................................................................................................................... 7
MAIN FINDINGS ........................................................................................................................................... 7
NEXT STEPS ................................................................................................................................................ 11
APPENDICES ............................................................................................................................................... 12
    Appendix 1: Outline of bill of quantities ................................................................................................. 12
    Appendix 2: List of private schools and individual summary reports for the affected private schools post-beirut port explosions ........................................................................................................... 17

LIST OF FIGURES

Figure 1: Locations and assessment results of the 113 private schools in and around Beirut .................. 7
Figure 2: Status of rehabilitation of the 113 schools at the time of assessment ........................................ 8
Figure 3: The level of damages sustained by the 113 schools at the time of assessment ......................... 8
Figure 4: The level of damages sustained by the 50 schools still identified in need of rehabilitation at the time of assessment .................................................................................................................. 9
Figure 5: Estimated costs of damages incurred by the 113 schools ......................................................... 9
Figure 6: Estimated costs of damage incurred by the 50 schools in need of rehabilitation .................... 9
Figure 7: Percentage of types of damages incurred across the 39 assessed schools .............................. 10
Figure 8: Vulnerability map of schools assessed (3,2,1 in ascending order from least vulnerable to most) 10
EXECUTIVE SUMMARY

The Port of Beirut explosions which took place on 4 August 2020, situated within the boundaries of the Municipality of Beirut (MoB), resulted in the devastating loss of life, injury and the destruction of vast tracts of urban fabric within the municipality and beyond.

Based on initial assessment undertaken by the Ministry of Education and Higher Education (MEHE), and according to UNESCO, within a 20 km radius of the blast, around 80 per cent of schools experienced moderate damage and 20 per cent sustained heavy damage. At the request of MEHE, UNESCO was asked to coordinate school related assessments and lead rehabilitation efforts of damaged schools in Beirut and Mount Lebanon.

UN-Habitat contributed to this undertaking, by leading with technical support from Frontline Engineers, a detailed physical damage assessment covering 113 private schools affected by the blast. In addition to quantifying the extent of damages to assessed schools, this included summarizing main findings according to a developed vulnerability index of assessed schools, completing a bill of quantities and cost estimates for each school assessed, and enabling a comprehensive overview of the needed rehabilitation of damages incurred.

Among the 113 private schools included in this assessment: 39 were fully assessed with new Bill of Quantities (BoQs) produced; 11 conducted their own damage assessment through engineering companies; 48 were found to have started or completed the rehabilitation of works; 9 schools were not reachable, and 6 had no damages at all.

Out of 50 schools still in need of rehabilitation, 12 schools were classified as severely damaged, 19 schools were moderately damaged and 19 suffered minor damages. The combined estimated repair costs of these 50 schools is nearly USD 2,500,000. Out of the 50 schools, 17 are considered to be highly vulnerable and have a total estimated rehabilitation cost of around USD 600,000.
BACKGROUND AND CONTEXT
On 4 August 2020, a series of explosions took place at the Port of Beirut causing widespread casualties and severe physical damage across Greater Beirut. Over 200 people were killed, 6,000 were injured, hundreds of thousands directly impacted and tens of thousands of buildings and homes incurring damages ranging from minor to major, and some rendered totally destroyed.

The Port of Beirut is located in close proximity to multiple key districts of what constitutes the centre of the city – downtown Beirut – adorned by historic landmarks, sites and streets, vibrant commercial, social and residential districts, alongside several vulnerable and dense urban neighbourhoods. According to MEHE initial assessment, at least 163 public and private schools were damaged by the explosions – affecting over 70,000 students and 7,600 teachers. Furthermore, 20 technical and vocational education and training schools were damaged, impacting around 7,300 students. Such extensive damages have not only impacted the commencement of the new academic year, in addition to COVID-19, but will further negatively compound the pre-existing socio-economic crisis in the country, including depriving Lebanese and non-Lebanese students enrolled in these schools of their right to education.

PURPOSE
The main purpose of the assessment was to ascertain the extent of damages to 113 identified private schools impacted by the Beirut Port explosions. The assessment further analysed the extent of damages to the identified private schools, while highlighting those that are most vulnerable and in need of immediate intervention and support.

This assessment complements the efforts already undertaken by MEHE and UNESCO. The latter being called upon by MEHE to lead the coordination of efforts to assess and rehabilitate schools among education partners to avoid duplications and ensure compatibility of interventions. UN-Habitat was subsequently requested by UNESCO to complete a detailed physical damage and cost estimate assessment of 113 private schools affected by the blast.

INTRODUCTION
According to UNESCO and based on initial assessment undertaken by the Ministry of Education and Higher Education (MEHE) thus far, around 80 per cent of schools have experienced moderate damage and 20 per cent have sustained heavy damage, within a 20km radius of the blast.

The assessment involved an onsite evaluation of damages and losses caused by the Beirut Port explosions. The detailed assessment recorded the extent of damage, what can be replaced, restored or salvaged with the aim of providing detailed cost estimates allowing for a prioritized rehabilitation of damaged schools.

The assessment methodology included three stages:
- Pre-assessment stage – 1 week
- Assessment stage – 2 weeks
- Post-assessment stage – 2 weeks

PRE-ASSESSMENT STAGE
The pre-assessment stage involved two main elements: planning and preparation. This stage aimed to define how to conduct the field inspection, identify the specific sites to visit, organize the on-site survey, identify the type of data to be collected, and the data collection methodology.

UN-Habitat started by analysing the received information from UNESCO and MEHE and produced a location map of the 113 schools alongside their CERD reference. Previously completed rapid and thorough damage assessments, pictures, bill of quantities and testimonies were compared against the number of students, the proximity of the schools to the blast, the construction type and date – in order to determine priorities and arrange the site visits schedule.

All schools on the list were contacted to obtain further necessary information to complete the assessment exercise and to schedule site visits. Schools that had already completed a damage assessment exercise were asked to share the produced reports to verify their quality and alignment with the rest of the assessment exercise. Some of these schools were not willing to share the assessment findings or BoQs. At this stage, schools that had already started or completed rehabilitation were excluded from the next steps of the assessment exercise. Based on this criteria, 50 out of 113 schools remained to be assessed.

To conduct the physical assessment in a timely manner, UN-Habitat worked with Frontline Engineers to train architect and engineer volunteers who formed...
part of the teams conducting the field assessments. These volunteers were divided into sub-teams, each included a team leader, senior and junior architects and engineers of different expertise (civil, mechanical, electrical...).

UN-Habitat and Frontline Engineers adopted a unified assessment methodology and bill of quantities template (Appendix 1) to ensure consistency. A training and orientation session targeting all the field sub-teams was carried out and applied on a pilot school.

ASSESSMENT STAGE

The assessment or implementation stage, which involved the field inspection, started after completing the planning and preparation phase. The outcomes of this phase included written records and photographs. The sub-teams conducted field visits to all the schools and assessed and documented all damages using a paper and pen approach.

Within this approach, the surveyor used a paper and pen to collect data and to assess damage in the field, using the developed templates. In the case of schools that provided reports, surveyors added their observations and notes to the reports. The collected data covers all damages and needed information within each school.

Knowing that some schools had completed emergency repairs and rehabilitation works, this assessment focused only on the damages that were still apparent and did not document the damages and items already repaired.

POST-ASSESSMENT STAGE

After the assessment stage, the collected data was digitized, cleaned and examined to extract relevant information. This step was crucial to draw connections between damage and other important data that may not be available or obvious at the time of the field assessment. After data verification, results were analysed to understand how they can feed into the reports.

In order to prioritize the schools that are in most need of rehabilitation, UN-Habitat added two layers of information to the estimated cost of rehabilitation: (1) the level of damages; and (2) a vulnerability index for each school.

The level of damage allows to identify the extent of damage affecting each individual school, divided into four categories:

- No damage – the school was not affected by the Beirut Port explosions
- Minor damage – the school was minimally affected allowing most facilities of the school to remain operational
- Moderate damage – the school was moderately affected to an extent where several facilities are unusable and not functional
- Major damage – the school was heavily affected, where most of the facilities are out of order or will become out of order if not rehabilitated rapidly

VULNERABILITY INDEX

The vulnerability index\(^4\) is a ranking of each school's vulnerability with a score of 1 being the least vulnerable to 3 being the most. It is calculated through a scoring exercise using the below criteria:

- Schools that are not-for-profit or semi-private, i.e., charge lower school fees to children/families;
- Schools that operate in multiple shifts and have crowded classrooms;
- Schools with high number of students vs. the number of classrooms and teachers;
- Schools that cater for students who sit for national official examinations (e.g. Grade 9 Brevet and Grade 12 Baccalaureate diplomas);
- Schools that cannot operate without rehabilitation (partial or full) and thus unable to provide education services to children;
- Schools in localities with multiple deprivations including: large populations of out-of-school children; high levels of child labour; early marriage; children with experience of violence (including negative disciplinary actions); families with children with disabilities in low income quintile living under poverty line; households with unsafe water and lacking sanitary facility;
- Schools that serve most vulnerable children and youth, including Syrian and other refugees from low-income households, girls, those from poor female-headed households, children with disabilities, etc.;
- Schools that support and encourage participation of vulnerable students and girls in education, sports/recreational and cultural activities.

The last step of this stage is the report write up. A general report is produced, incorporating all the general findings in one document, along with detailed individual reports for each school detailing the individually collected information for the school.

\(^4\) Developed by UN-Habitat, and endorsed by UNESCO to prioritize schools in most need.
The main challenges encountered include:

- Several schools already hired engineering professional/companies to assess the damages without prior coordination with MEHE;
- Some schools already started or completed repairs/rehabilitation of damages without prior coordination with MEHE;
- Incomplete information (contact numbers, coordinates) provided concerning some schools;
- Incorrect information, including schools which were not affected by the explosions;
- Lack of cooperation from some schools that were not officially informed of the assessment in advance and refused to either cooperate or share information on previous assessment/status of repairs.

![Image of UN-Habitat/ Frontline Engineers volunteer (2020)]

**MAIN FINDINGS**

![Map showing locations and assessment results of the 113 private schools in and around Beirut]

Figure 1 Locations and assessment results of the 113 private schools in and around Beirut
From a total of 113 assessed schools: 6 schools were found to have sustained no damages (not affected); 9 schools were not available/accessible for the assessment exercise (no answer); 98 schools sustained varying levels of damage, out of which 48 had started or completed rehabilitation (rehabilitation started/completed); 11 had completed a damage assessment and produced a detailed BoQ on their own (assessment completed by school); and 39 were assessed through this exercise with new BoQs produced (assessment completed by volunteers).

Therefore, at the time of assessment, 50 schools were identified as still in need of some level of rehabilitation, the majority of these schools are located in Beirut and Bourj Hammoud, the two most affected municipalities.

Figure 2 Status of rehabilitation of the 113 schools at the time of assessment

Figure 3 The level of damages sustained by the 113 schools at the time of assessment
The 50 schools that need rehabilitation incurred various levels of damages: 19 have minor damage, 19 moderate damage and 12 major damage.

Classified according to the estimated cost of repairs, 24 school have incurred damages estimated at lower than USD 20,000 per school, 19 schools have incurred damages estimated between USD 20,000 and 100,000 per school and 7 have incurred damages estimated above USD 100,000, with College des Freres in Gemmayze sustained the most damages at an estimated cost of USD 675,000.
The BoQ was divided into three parts:
- Part 1 – Civil, Structural & Architectural works
- Part 2 – Mechanical engineering services
- Part 3 – Electrical engineering services

The most recurrent type of damage observed was civil, structural and architectural at 90 per cent, with electrical engineering services and mechanical damages at 7.16 per cent and 2.66 per cent respectively.

Out of the 50 schools that are still in need of rehabilitation, 10 schools are considered as not vulnerable, 23 are moderately vulnerable and 17 are highly vulnerable. Out of the 17 highly vulnerable schools, the types of damages incurred are: 9 minor damage, 7 moderate damage, 1 major damage. A full ranking can be found in Appendix 2, where the level of damage per school and ranked vulnerability score is also indicated.

Figure 7 Percentage of types of damages incurred across the 39 assessed schools

Out of the 50 schools that are still in need of rehabilitation, 10 schools are considered as not vulnerable, 23 are moderately vulnerable and 17 are highly vulnerable. Out of the 17 highly vulnerable schools, the types of damages incurred are: 9 minor damage, 7 moderate damage, 1 major damage. A full ranking can be found in Appendix 2, where the level of damage per school and ranked vulnerability score is also indicated.

Figure 8 Vulnerability map of schools assessed (3, 2, 1 in ascending order from least vulnerable to most)
NEXT STEPS

- Presentation and dissemination of report following validation by MEHE, highlighting the needs of the most vulnerable identified schools, amongst relevant actors and coordination fora.
- Identification of remaining private schools affected by the blasts but not included in UN-Habitat’s assessment and agreement on the way forward.
- Sharing of report and BOQs with interested actors willing to fund rehabilitation work.

- Launching rehabilitation works in private schools that still have not started or completed their rehabilitation works.
- Follow up with schools and partners on status and progress of rehabilitation works and sharing relevant updates with MEHE.
## APPENDIX 1: BILL OF QUANTITIES TABLE OF CONTENTS

### GENERAL PREAMBLES

### GENERAL SUMMARY

### PART 1 CIVIL, STRUCTURAL AND ARCHITECTURAL WORKS

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SITE PREPARATION AND DEMOLITION</td>
</tr>
<tr>
<td>1.1</td>
<td>Demolishing and Removal of Debris</td>
</tr>
<tr>
<td>2.</td>
<td>EXTERNAL WORKS</td>
</tr>
<tr>
<td>2.1</td>
<td>Excavation, Backfilling and Earthworks</td>
</tr>
<tr>
<td>2.2</td>
<td>Base Course</td>
</tr>
<tr>
<td>2.3</td>
<td>Precast Concrete Pavement and Curb</td>
</tr>
<tr>
<td>2.3.1.a</td>
<td>Precast Concrete Tiles</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Interlocking Tiles</td>
</tr>
<tr>
<td>2.3.3</td>
<td>Stone Tiling for Passage</td>
</tr>
<tr>
<td>2.3.4</td>
<td>New Curbstone</td>
</tr>
<tr>
<td>2.3.5</td>
<td>Wheel Stopper</td>
</tr>
<tr>
<td>2.4</td>
<td>Existing Walkways</td>
</tr>
<tr>
<td>2.5</td>
<td>Planting</td>
</tr>
<tr>
<td>2.5.1</td>
<td>Plant Trees</td>
</tr>
<tr>
<td>2.5.2</td>
<td>Agricultural Works</td>
</tr>
<tr>
<td>2.5.3</td>
<td>Grass</td>
</tr>
<tr>
<td>2.6</td>
<td>School Fences with Related Gates</td>
</tr>
<tr>
<td>2.6.1</td>
<td>New Fence - Type 1 (Concrete &amp; Steel with Entrance gates)</td>
</tr>
<tr>
<td>2.6.2</td>
<td>New Fence - Type 2 (Steel)</td>
</tr>
<tr>
<td>2.6.3</td>
<td>New fence - Type 3 (Steel Beta Fence Prefab):</td>
</tr>
<tr>
<td>2.6.4</td>
<td>New Fence - Type 4 (Chain Link)</td>
</tr>
<tr>
<td>2.6.5</td>
<td>Rehabilitate Existing Fence - Type 5 (Strengthening and Rehabilitation)</td>
</tr>
<tr>
<td>2.6.6</td>
<td>Rehabilitate Existing Fence - Type 6 (Extension with Rehabilitation)</td>
</tr>
<tr>
<td>2.6.7</td>
<td>Rehabilitate Existing Fence - Type 7 (Steel Fences with Rehabilitation)</td>
</tr>
<tr>
<td>2.6.8</td>
<td>Rehabilitate Existing Fence - Type 8 (Chain Link Fences with Rehabilitation)</td>
</tr>
<tr>
<td>2.6.9</td>
<td>Rehabilitate Existing Fence (Solid + Steel + Upper Chainlink) - Type 9</td>
</tr>
<tr>
<td>2.7</td>
<td>Recycling Area</td>
</tr>
<tr>
<td>2.7.1</td>
<td>Recycling Room</td>
</tr>
<tr>
<td>2.7.2</td>
<td>Recycling Containers</td>
</tr>
<tr>
<td>2.8</td>
<td>Traffic Sign Boards</td>
</tr>
<tr>
<td>2.9</td>
<td>Ramp for External Existing Sidewalk</td>
</tr>
<tr>
<td>2.10</td>
<td>Rehabilitate Asphalt Paving</td>
</tr>
<tr>
<td>2.11</td>
<td>Flagpole</td>
</tr>
<tr>
<td>3.</td>
<td>CONCRETE WORKS</td>
</tr>
<tr>
<td>3.1</td>
<td>Cast in Place Concrete</td>
</tr>
<tr>
<td>3.1.1</td>
<td>Plain Concrete</td>
</tr>
<tr>
<td>3.1.2</td>
<td>Reinforced Concrete Footings, Tie Beams, Columns and Walls Drop - Parapete - Slab on Grade</td>
</tr>
<tr>
<td>3.1.3</td>
<td>Reinforced Concrete Slabs</td>
</tr>
<tr>
<td>3.1.4</td>
<td>Hollow Concrete Slab (Ribbed Slab)</td>
</tr>
<tr>
<td>3.1.5</td>
<td>Reinforced Existing Columns and Beams</td>
</tr>
<tr>
<td>3.1.6</td>
<td>Internal and External Stairs</td>
</tr>
<tr>
<td>3.1.7</td>
<td>Ramp for Handicapped</td>
</tr>
<tr>
<td>3.1.8</td>
<td>Slab on Grade For External Playgrounds</td>
</tr>
<tr>
<td>3.1.9</td>
<td>Precast Concrete Benches</td>
</tr>
<tr>
<td>3.1.10</td>
<td>Rehabilitation of Playground Slabs (External Playground):</td>
</tr>
<tr>
<td>3.1.11</td>
<td>EPOXY DOWELS</td>
</tr>
<tr>
<td>3.2</td>
<td>Stamped Concrete</td>
</tr>
</tbody>
</table>
4. **MASONRY**
4.1 Hollow or Solid Concrete Blocks and Clostra
4.2 Exterior Stone works
4.2.1 New Natural Stone Facades
4.2.2 New Natural Stone Plinth
4.2.3 New Natural Stone for External Works
4.2.4 Rehabilitate Natural Stone Facades

5. **METAL WORKS**
5.1 Metal Fabrications
5.1.1 Steel Work for openings (Doors and Windows)
5.1.2 Rehabilitate and Maintain the Existing Steel Work (Burglar Proof Protection + Opening)
5.1.3 Steel Louver
5.1.4 Roof Opening Cover
5.1.5 Galvanized Wire Mesh Protection
5.1.6 Steel Ramp
5.1.7 Scaffolding Steel for Water Tank
5.1.8 Electric Steel Rolling Shutter
5.1.9 New Steel School Sign Boards
5.1.10 Steel Ladder (New)
5.1.11 New Steel Sheds
5.1.12 New Steel Sheds - Brick Tiles at Roof
5.1.13 Rehabilitate Existing Steel Shed Works
5.1.14 Metal Handrail Works
5.1.15 Rehabilitate and Maintain Steel Handrail

6. **WOOD WORKS**
6.1 Joinery Works
6.1.1 Timber Cupboard For New Kitchens
6.1.2 Timber Cupboard
6.1.3 Timber Stage
6.1.4 Rehabilitate the Existing Timber Stage with Steps and Add New part to Existing Timber
6.2 Bathrooms Partitions

7. **THERMAL AND MOISTURE PROTECTION**
7.1 Roof Waterproofing
7.2 Polyurethane Waterproofing for Wet Areas
7.3 Insulate the New and Old Basements Walls
7.4 Green Roof
7.5 Expansion Joints
7.5.1 New Expansion Joints
7.5.2 Rehabilitate the Existing Expansion Joints

8. **DOOR AND WINDOWS**
8.1 Wooden Doors and Windows
8.1.1 Timber Doors for Classrooms and Teaching Places
8.1.2 New Timber External Shutters (Louvers)
8.1.3 Rehabilitate the Existing Timber Doors:
8.1.4 Rehabilitate Timber External Joinery Works Windows and Shutters
8.2 Aluminum Doors and Windows
8.2.1 New Aluminum Panels (Double Glass)
8.2.2 New Aluminum Panels (Single Glass)
8.2.3 New Aluminum Internal Door
8.2.4 Rehabilitation Existing Glazed Aluminum Panels
8.3 Aluminum Composite Panel
8.4 Master Key

9. **FINISHES**
9.1.1 New Internal and External Plaster Works
9.1.2 Repair of Existing Plaster (Internal - External) (Cracks,...)
9.1.3 Rehabilitate All Windows Ornaments Sunbreakers and the like
Rehabilitation of all existing Balustrade Parapets (Historical)

Tiling Works

Full Mass Colored Ceramic for Floors
Glazed Colored Ceramic for Walls
New Tiles

Repair of Existing Ceramic Tiles with Similar and Clean All (Floors and Walls)

New Tiles

Repair existing broken floor tiles and skirting (all types) and reinstall by new, similar to existing for all rooms and corridors

Tile Repair in classrooms

Rehabilitate Existing Stair Treads and Riser

Threshold Tiles (Doors, Marble Topping)

Clean and Rub the Existing Floor Tiles and Skirting

Clean the Existing Decorative Wall Tiles

Colored P.V.C. Flooring for KG Classrooms

Colored P.V.C. for Covered Indoor KG Playgrounds

Anti Shock Rubber Flooring

Ceiling Works

Metal Sheet Strips Suspended Ceilings:

Gypsum Works

Gypsum Board Suspended Ceiling:

Partitions (Walls)

Painting

Wall and Ceilings Paint Works

Outside Walls Paint (Old and New Walls and Ceilings)

Paint Damp proof Colorless Layer Unleaded on Facades and Supply a Guarantee for Five Years

Maplexine, Monocouche or Santex Works

External Tyrolen Plaster/Water Proofing (Complete surface to be covered)

Epoxy Flooring

SPECIALTIES

Bathrooms Accessories:

Paper Roller Holder

Soap Dispenser

Paper Holder Box

Mirror for Lavatories

Handicapped Bathroom Accessories

Classroom Specialties

White Teaching Boards

Educational Panels Inside Classrooms

Signage

Resin Work

Drinking Basin

Lavatory Countertop

Laboratory furniture (All Types - Biology - Physics - Chemistry - Science ...etc)

Kitchen Counter

Canteen Counter

Round Corner Protector on Aluminum Core

Corner Guards

Guard Protection For Column (KG Playground)

Internal Curtains

Floor Guide Signage

Sound Insulation Board with Protection on Walls

EQUIPMENT

EQUIPMENT ATHLETIC COURTS (BASKET BALL NET, BACKBOARD AND SUPPORTS)

Vacuum Cleaner Machine for Vinyl
## PART 2 MECHANICAL ENGINEERING SERVICES

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>GENERAL TECHNICAL REQUIREMENTS</td>
</tr>
<tr>
<td>2.</td>
<td>BELOW GROUND DRAINAGE</td>
</tr>
<tr>
<td>2.1</td>
<td>Sanitary, Rain Water and Pipe Work Installation (below ground)</td>
</tr>
<tr>
<td>2.2</td>
<td>Manholes Pits</td>
</tr>
<tr>
<td>2.3</td>
<td>Submersible Pump</td>
</tr>
<tr>
<td>2.4</td>
<td>Neutralization Pit</td>
</tr>
<tr>
<td>3.</td>
<td>SANITARY, WASTE &amp; RAIN WATER PIPE WORK INSTALLATION</td>
</tr>
<tr>
<td>3.1</td>
<td>Drainage System inside the Building</td>
</tr>
<tr>
<td>3.2</td>
<td>Floor Drain</td>
</tr>
<tr>
<td>3.3</td>
<td>Drain Cover</td>
</tr>
<tr>
<td>3.4</td>
<td>Channel Drain</td>
</tr>
<tr>
<td>3.5</td>
<td>Roof Vent Cap</td>
</tr>
<tr>
<td>4.</td>
<td>PIPED SYSTEMS (LIQUIDS)</td>
</tr>
<tr>
<td>4.1</td>
<td>Cold &amp; Hot Water Piping Inside Building</td>
</tr>
<tr>
<td>4.2</td>
<td>Potable Water Piping</td>
</tr>
<tr>
<td>4.3</td>
<td>Water Tanks</td>
</tr>
<tr>
<td>4.4</td>
<td>Drinking Water Tank</td>
</tr>
<tr>
<td>4.5</td>
<td>Electrical Water Heater</td>
</tr>
<tr>
<td>4.6</td>
<td>Heat Exchanger with Back-Up Electric Heater</td>
</tr>
<tr>
<td>4.7</td>
<td>Solar Panels</td>
</tr>
<tr>
<td>4.8</td>
<td>Circulation Water Pumps</td>
</tr>
<tr>
<td>4.9</td>
<td>Booster Pumps</td>
</tr>
<tr>
<td>5.</td>
<td>GENERAL BOILER PLANT</td>
</tr>
<tr>
<td>5.1</td>
<td>Boiler</td>
</tr>
<tr>
<td>5.2</td>
<td>Heating Water Pumps</td>
</tr>
<tr>
<td>5.3</td>
<td>Heating Water Pipes</td>
</tr>
<tr>
<td>5.4</td>
<td>Aluminum Radiators</td>
</tr>
<tr>
<td>5.5</td>
<td>Control Panel</td>
</tr>
<tr>
<td>5.6</td>
<td>Fuel Storage Tanks</td>
</tr>
<tr>
<td>5.7</td>
<td>Flow and Fill Pipework</td>
</tr>
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<td>6.1</td>
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<td>Portable Fire Extinguisher</td>
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<td>Automatic Fire Extinguisher</td>
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<td>WATER TREATMENT</td>
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<td>Treatment and water purification station</td>
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<td>SANITARY FIXTURES</td>
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<td>9.1</td>
<td>W.C. for Kids</td>
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<td>W.C. For Non Kids</td>
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<td>Lavatories for Kids in the K.G.</td>
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<td>Lavatories for Non Kids</td>
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<td>9.6</td>
<td>Self Close Taps on Kids &amp; Students Lavatories</td>
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<td>9.7</td>
<td>Wall Type Self Close Taps on Drinking Basins</td>
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<td>9.8</td>
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<td>9.9</td>
<td>Taps for Lab Sinks</td>
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<td>9.10</td>
<td>Lavatories Resin Accessories</td>
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<td>Showers Tray</td>
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<td>9.12</td>
<td>Eye Wash</td>
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9.13  Janitor Sink

10.  THERMAL INSULATION
10.1  For Hot Water PPR Pipes (without Jacketing)
10.2  For Hot Water PPR Pipes (with Jacketing)
10.3  For Heating Black Steel Pipes (without Jacketing)
10.4  For Heating Black Steel Pipes (with Jacketing)

11.  GAS SERVICES
11.1  Copper Pipe Works
11.2  Propane/Butone Cylinder Tank
11.3  Gas Accessories

PART 3 ELECTRICAL ENGINEERING SERVICES

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<th>Item No.</th>
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<td>Fixing and Repairing</td>
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<td>DISTRIBUTION, SUBDISTRIBUTION AND FINAL BRANCH CIRCUIT PANELBOARDS</td>
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<td>Automatic Transfer Switches (ATS)</td>
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<td>Computer Lab Panel Board (Rehabilitation)</td>
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<td>CONDUITS, WIREWAYS, SUPPORTING SYSTEMS AND RELATED ACCESSORIES</td>
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<td>Low Voltage Distribution Braces Connection and Electrical Cables</td>
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<td>WIRING DEVICES AND DISCONNECTS</td>
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<td>Electrical Devices / Accessories</td>
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<td>UNINTERRUPTIBLE POWER SUPPLY (UPS)</td>
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<td>SOLAR SYSTEM</td>
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<td>BELL SYSTEM</td>
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<td>CONVEY EQUIPMENTS - LIFTS</td>
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<td>15.1</td>
<td>LIFTS - Rehabilitation</td>
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## APPENDIX 2: LIST OF PRIVATE SCHOOLS AND INDIVIDUAL SUMMARY REPORTS FOR THE AFFECTED PRIVATE SCHOOLS POST-BEIRUT PORT EXPLOSIONS

<table>
<thead>
<tr>
<th>CERD</th>
<th>School name</th>
<th>Estimated damage cost (USD)*</th>
<th>Level of damages</th>
<th>Vulnerability index</th>
<th>Number of students</th>
<th>Number of teachers</th>
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<td>-</td>
<td>237</td>
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<td>-</td>
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*The estimated damage cost was provided by the private schools and was not the result of UN-Habitat’s physical damage assessment.
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<tr>
<th>School Name</th>
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<td>3,400</td>
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<td>Saint Charles</td>
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<td>Collège des Sœurs Antonines - Mar Doumith</td>
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<tr>
<td>7120</td>
<td>Lycee Abdelkader</td>
<td>Moderate</td>
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<tr>
<td>8628</td>
<td>Aventis School</td>
<td>Minor</td>
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<tr>
<td>5032</td>
<td>Ecole de Sacre Coeur</td>
<td>Minor</td>
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<tr>
<td>Code</td>
<td>School Name</td>
<td>Seating Capacity</td>
<td>Damage Level</td>
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<td>7168</td>
<td>Ecole Notre Dame du Perpetuel Secours</td>
<td>16,123</td>
<td>Moderate Damages</td>
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<td>Collège de la Sagesse Saint-Maron - Jdeideh</td>
<td>10,677</td>
<td>Major Damages</td>
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<td>سيدة المستقبل - الروضة</td>
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<td>Collège Saint Georges - Zalke</td>
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<td>Al Madrassah Al Maanah</td>
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<td>لبنان الاخضر</td>
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<td>Mar Youhana al Maamadan - Bouchrieh</td>
<td>5,890</td>
<td>Minor Damages</td>
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<td>Rawdat Dar al Amana wal Tanmiya</td>
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<td>Moderate Damages</td>
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<td>Kasr Al Thakafa - School</td>
<td>4,152</td>
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<td>7092</td>
<td>Lycee de Musee</td>
<td>3,564</td>
<td>Minor Damages</td>
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<td>7082</td>
<td>Ibn Roshod</td>
<td>3,237</td>
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<td>Saint George Assyrian School, Sed El Boushrieh</td>
<td>3,048</td>
<td>Minor Damages</td>
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<td>7154</td>
<td>مؤسسة الشرق الثانية</td>
<td>3,035$</td>
<td>Minor Damages</td>
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</tbody>
</table>
FRERES AL KALB EL AKDASS

**CERD number:** 7001

**Number of students:** 1,321

**Number of teachers:** 129

**Level of damage:** Major

**Types of damage:** Civil, structural and architectural; mechanical; and electrical

**Estimated rehabilitation cost:** USD 675,215

- Civil, Structural and Architectural Works (USD 625,794)
- Mechanical Engineering Services (USD 5,400)
- Electrical Engineering Services (USD 44,021)

COLLEGE DE LA SAGESSE

**CERD number:** 7003

**Number of students:** 575

**Number of teachers:** 95

**Level of damage:** Major

**Types of damage:** Civil, structural and architectural

**Estimated rehabilitation cost:** USD 301,434

- Civil, Structural and Architectural Works (USD 301,434)
ANNUNCIATION ORTHODOX SCHOOL BEIRUT

**CERD number:** 7004

**Number of students:** 903

**Number of teachers:** 188

**Level of damage:** Major

**Types of damage:** Civil, structural and architectural; mechanical; electrical

**Estimated rehabilitation cost:** USD 265,724

- Civil, Structural and Architectural Works (USD 182,298)
- Mechanical Engineering Services (USD 50,720)
- Electrical Engineering Services (USD 32,706)

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KULLIYAT AL BANAT – MAKASED

**CERD number:** 7027

**Number of students:** -

**Number of teachers:** -

**Level of damage:** Major

**Types of damage:** Civil, structural and architectural

**Estimated rehabilitation cost:** USD 157,011

- Electrical Engineering Services (USD 870)
COLLEGE DES SAINTS-COEURS SIOUFI

- **CERD number:** 7023
- **Number of students:** 1,972
- **Number of teachers:** 197
- **Level of damage:** Major
- **Types of damage:** Civil, structural and architectural; mechanical; and electrical
- **Estimated rehabilitation cost:** USD 121,611
  - Civil, Structural and Architectural Works (USD 120,500)
  - Mechanical Engineering Services (USD 50)
  - Electrical Engineering Services (USD 1,061)

MAR MANSOUR

- **CERD number:** 5008
- **Number of students:** 531
- **Number of teachers:** 27
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; mechanical; and electrical
- **Estimated rehabilitation cost:** USD 100,551
  - Civil, Structural and Architectural Works (USD 93,739)
  - Mechanical Engineering Services (USD 240)
  - Electrical Engineering Services (USD 6,572)
**KHALED BIN AL WALID**

- **CERD number:** 7097
- **Number of students:** 407
- **Number of teachers:** 91
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; mechanical; and electrical
- **Estimated rehabilitation cost:** USD 65,610
  - Civil, Structural and Architectural Works (USD 63,700)
  - Mechanical Engineering Services (USD 250)
  - Electrical Engineering Services (USD 1,660)

**Location of assessed school**

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**RAHIBAT AL SALAM**

- **CERD number:** 7146
- **Number of students:** 409
- **Number of teachers:** 58
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; electrical
- **Estimated rehabilitation cost:** USD 60,809
  - Civil, Structural and Architectural Works (USD 58,920)
  - Electrical Engineering Services (USD 1,889)

**Location of assessed school**
ELITE - MSAYTBEH

- **CERD number**: 7044
- **Number of students**: 423
- **Number of teachers**: 56
- **Level of damage**: Moderate
- **Types of damage**: Civil, structural and architectural; and electrical
- **Estimated rehabilitation cost**: USD 57,431
  - Civil, Structural and Architectural Works (USD 32,018)
  - Electrical Engineering Services (USD 25,413)

Location of assessed school

COLLÈGE SAINT SAUVEUR

- **CERD number**: 7016
- **Number of students**: 412
- **Number of teachers**: 42
- **Level of damage**: Minor
- **Types of damage**: Civil, structural and architectural
- **Estimated rehabilitation cost**: USD 53,310
  - Civil, Structural and Architectural Works (USD 53,095)
  - Mechanical Engineering Services (USD 25)
  - Electrical Engineering Services (USD 190)

Location of assessed school
ZAH RAT AL IHSAN

- **CERD number:** 7019
- **Number of students:** 954
- **Number of teachers:** 168
- **Level of damage:** Major
- **Types of damage:** Civil, structural and architectural; mechanical; electrical
- **Estimated rehabilitation cost:** USD 46,832
  - Civil, Structural and Architectural Works (USD 44,052)
  - Mechanical Engineering Services (USD 120)
  - Electrical Engineering Services (USD 2,660)

ARMENIAN EVANGELICAL SHAMLIAN TATIKIAN HIGH SCHOOL

- **CERD number:** 7142
- **Number of students:** 270
- **Number of teachers:** 28
- **Level of damage:** Major
- **Types of damage:** Civil, structural and architectural; mechanical; electrical
- **Estimated rehabilitation cost:** USD 46,832
  - Civil, Structural and Architectural Works (USD 44,052)
  - Mechanical Engineering Services (USD 120)
  - Electrical Engineering Services (USD 2,660)
SAINT CHARLES

- **CERD number:** 7012
- **Number of students:** 132
- **Number of teachers:** 18
- **Level of damage:** Major
- **Types of damage:** Civil, structural and architectural; mechanical, electrical
- **Estimated rehabilitation cost:** USD 43,853
  - Civil, Structural and Architectural Works (USD 43,368)
  - Electrical Engineering Services (USD 485)

ALI BIN ABI TALEB

- **CERD number:** 7013
- **Number of students:** 205
- **Number of teachers:** 39
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; and electrical
- **Estimated rehabilitation cost:** USD 43,248
  - Civil, Structural and Architectural Works (USD 41,402)
  - Electrical Engineering Services (USD 1,846)
VAHAN TEKEYAN

- **CERD number:** 7144
- **Number of students:** 103
- **Number of teachers:** 23
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; mechanical; electrical
- **Estimated rehabilitation cost:** USD 41,532
  - Civil, Structural and Architectural Works (USD 41,331)
  - Mechanical Engineering Services (USD 175)
  - Electrical Engineering Services (USD 26)

Location of assessed school

ARMENIAN EVANGELICAL SCHOOL (COLLEGE)

- **CERD number:** 7104
- **Number of students:** 131
- **Number of teachers:** 41
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 35,168
  - Civil, Structural and Architectural Works (USD 35,168)

Location of assessed school
IKHAA NATIONAL SCHOOL

- **CERD number:** 7034
- **Number of students:** 584
- **Number of teachers:** 62
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; and electrical
- **Estimated rehabilitation cost:** USD 38,313
  - Civil, Structural and Architectural Works (USD 37,716)
  - Electrical Engineering Services (USD 598)

Location of assessed school

COLLÈGE DES SOEURS DE NOTRE DAME DES APOTRES

- **CERD number:** 7241
- **Number of students:** 1,556
- **Number of teachers:** 129
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; electrical
- **Estimated rehabilitation cost:** USD 32,191
  - Civil, Structural and Architectural Works (USD 31,239)
  - Electrical Engineering Services (USD 952)

Location of assessed school
SAGESSE EIN REMENEH

- CERD number: 7178
- Number of students: 146
- Number of teachers: 43
- Level of damage: Minor
- Types of damage: Civil, structural and architectural
- Estimated rehabilitation cost: USD 22,155
  - Civil, Structural and Architectural Works (USD 22,155)

APOSTLE JOHN SCHOOL

- CERD number: 8672
- Number of students: 20
- Number of teachers: 4
- Level of damage: Minor
- Types of damage: Civil, structural and architectural
- Estimated rehabilitation cost: USD 21,985
  - Civil, Structural and Architectural Works (USD 21,985)
COLLÈGE DES SOEURS ANTONINES – MAR DOUMITH

- **CERD number:** 7263
- **Number of students:** 1,545
- **Number of teachers:** 149
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural; electrical
- **Estimated rehabilitation cost:** USD 19,451
  - Civil, Structural and Architectural Works (USD 6,951)
  - Electrical Engineering Services (USD 12,500)

Location of assessed school

LYCEE ABDELKADER

- **CERD number:** 7120
- **Number of students:** 1,597
- **Number of teachers:** 158
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; and electrical
- **Estimated rehabilitation cost:** USD 18,593
  - Civil, Structural and Architectural Works (USD 16,423)
  - Electrical Engineering Services (USD 2,170)

Location of assessed school
AVENTIS SCHOOL

- **CERD number:** 8628
- **Number of students:** 103
- **Number of teachers:** 10
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural; electrical
- **Estimated rehabilitation cost:** USD 17,399
  - Civil, Structural and Architectural Works (USD 17,249)
  - Electrical Engineering Services (USD 150)

ECOLE DE SACRE COEUR NABAA

- **CERD number:** 5032
- **Number of students:** 216
- **Number of teachers:** 14
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 16,835
  - Civil, Structural and Architectural Works (USD 16,835)
ECOLE NOTRE DAME DU PERPETUEL SECOURS

- **CERD number:** 7168
- **Number of students:** 321
- **Number of teachers:** 28
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 16,123
  - Civil, Structural and Architectural Works (USD 16,123)

COLLÈGE DE LA SAGESSE SAINT-MARON - JDEIDEH

- **CERD number:** 7227
- **Number of students:** 888
- **Number of teachers:** 172
- **Level of damage:** Major
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 10,677
  - Civil, Structural and Architectural Works (USD 10,677)
**SANABEL**

- **CERD number:** 5548
- **Number of students:** 414
- **Number of teachers:** 29
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 10,225
  - Civil, Structural and Architectural Works (USD 10,225)

**COLLEGE SAINT GEORGES ZALKA**

- **CERD number:** 7398
- **Number of students:** 517
- **Number of teachers:** 63
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 9,878
  - Civil, Structural and Architectural Works (USD 9,815)
  - Electrical Engineering Services (USD 63)
AL MADRASSAH AL MAANIAH

- **CERD number:** 7036
- **Number of students:** 536
- **Number of teachers:** 43
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 9,533
  - Civil, Structural and Architectural Works (USD 9,533)

GREEN LEBANON

- **CERD number:** 7038
- **Number of students:** 63
- **Number of teachers:** 19
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural; and electrical
- **Estimated rehabilitation cost:** USD 8,344
  - Civil, Structural and Architectural Works (USD 8,324)
  - Electrical Engineering Services (USD 20)
MAR YOUHANA AL MAAMADAN – BOUCHRIEH

- CERD number: 5066
- Number of students: 252
- Number of teachers: 33
- Level of damage: Minor
- Types of damage: Civil, structural and architectural
- Estimated rehabilitation cost: USD 5,890
  - Civil, Structural and Architectural Works (USD 5,890)

Location of assessed school

ECOLE A PROGRAMME INDIVIDUALISE

- CERD number: 8674
- Number of students: 49
- Number of teachers: 13
- Level of damage: Minor
- Types of damage: Civil, structural and architectural; electrical
- Estimated rehabilitation cost: USD 4,229
  - Civil, Structural and Architectural Works (USD 4,189)
  - Electrical Engineering Services (USD 40)

Location of assessed school
RAWDAT DAR AL AMANA WAL TANMIYA

- **CERD number:** 8798
- **Number of students:** 218
- **Number of teachers:** 14
- **Level of damage:** Moderate
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 4,194
  - Civil, Structural and Architectural Works (USD 4,194)

KASR AL THAKAFA – SCHOOL

- **CERD number:** 7061
- **Number of students:** 100
- **Number of teachers:** 17
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 4,152
  - Civil, Structural and Architectural Works (USD 4,152)
LYCEE DE MUSEE

- **CERD number:** 7092
- **Number of students:** 273
- **Number of teachers:** 28
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 3,564
  - Civil, Structural and Architectural Works (USD 3,564)

IBN ROSHOD

- **CERD number:** 7082
- **Number of students:** 41
- **Number of teachers:** 13
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural; and electrical
- **Estimated rehabilitation cost:** USD 3,237
  - Civil, Structural and Architectural Works (USD 3,197)
  - Electrical Engineering Services (USD 40)
SAINT GEORGES ASSYRIAN SCHOOL – BOUCHRIEH

- **CERD number:** 7242
- **Number of students:** 136
- **Number of teachers:** 12
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 3,048
  - Civil, Structural and Architectural Works (USD 3,048)

Location of assessed school

LYCEE D’ORIENT

- **CERD number:** 7154
- **Number of students:** 60
- **Number of teachers:** 10
- **Level of damage:** Minor
- **Types of damage:** Civil, structural and architectural
- **Estimated rehabilitation cost:** USD 3,035
  - Civil, Structural and Architectural Works (USD 3,035)

Location of assessed school