

PHYSICAL DAMAGE ASSESSMENT OF PRIVATE SCHOOLS

IN RESPONSE TO THE BEIRUT PORT EXPLOSIONS

October 2020



PHYSICAL ASSESSMENT OF PRIVATE SCHOOLS

**RESPONSE TO THE DAMAGES INCURRED
BY THE BEIRUT PORT EXPLOSIONS**



October 2020

PARTNERS



United Nations Educational,
Scientific and Cultural
Organisation (UNESCO)



Rebuilding Heritage, Culture and
Education #ForBeirut



Ministry of Education and
Higher Education (MEHE)



Frontline Engineers

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UN-HABITAT LEBANON

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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 20km 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 vulnerable¹ and have a total estimated rehabilitation cost of around USD 600,000.



¹ Establishments that are considered less capable in terms of physical, financial and human resources.

INTRODUCTION

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 COVID19-, 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.

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.

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.

METHODOLOGY

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 reference². 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 Engineers³ to train architect and engineer volunteers who formed

² Centre for Educational Research and Development, provided by MEHE and UNESCO

³ A non-profitable organization that provides engineering and architectural consulting services to governmental and non-governmental organizations.

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.

- 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 index⁴ 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.

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https://www.yunbaogao.cn/report/index/report?reportId=5_17586

