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**Pan American Health Organisation
Emergency Preparedness & Disaster Relief Programme**

**Ministry of Health
Barbados**

**Vulnerability Assessment
of the
Queen Elizabeth Hospital
Bridgetown
Barbados**

October 1998

**Tony Gibbs
Consulting Engineers Partnership Ltd**



CEP

CONSULTING ENGINEERS PARTNERSHIP LTD



1963-1998 in Barbados

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Pan American Health Organisation
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Attention: Dr Dana van Alphen

Dear Mesdames/Sirs,

Queen Elizabeth Hospital, Barbados

In accordance with your instructions, I have carried out a vulnerability assessment of the Queen Elizabeth Hospital (QEH) at St Michael in Barbados. The assessment included document searches, field surveys, interviews with various members of the hospital staff (past and present) and desk studies. The studies were aimed at determining the degrees of vulnerability of the QEH and its various buildings to torrential rain, hurricanes and earthquakes. I also developed recommendations for the short, medium and long terms with cost estimates for some of the short-term actions.

The report catalogues the appropriate levels of the three natural hazards against which the QEH should be assessed. These levels are supported by available scientific evidence which is summarized in our report. Barbados is subject to severe and frequent rainstorms, to severe but infrequent hurricanes and to moderate, infrequent earthquakes. Although the level of seismic activity is moderate, it cannot be ignored. Indeed earthquakes are the controlling factor for the design and detailing of some of the elements of the QEH, particularly its non-structural components.

The original QEH was completed in 1964. Since then there have been several additions to the complex of facilities. The report describes briefly each building and indicates its condition and vulnerability.



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Vulnerability Assessment of the Queen Elizabeth Hospital Bridgetown, Barbados

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1 INTRODUCTION

1.1 The Location

The Queen Elizabeth Hospital (QEH) is located on the outskirts of the city centre of the capital, Bridgetown, in the parish of St. Michael, to the south-west of the island. A sketch depicting its location is provided in Appendix B.

1.2 Terms of Reference

The Pan American Health Organisation (PAHO) engaged the services of Tony Gibbs of Consulting Engineers Partnership Ltd (CEP) to undertake a vulnerability survey of the hospital facility in order to, *inter alia*:

- determine the current condition of the hospital through reviewing existing reports, plans, specifications and other documents referring to the design and construction of the hospital, and conducting inspections of the facility;
- estimate the level of resistance of the hospital to natural hazards;
- prepare cost-effective recommendations which will not only reduce the incidence of fatalities during natural hazards, but will also allow the critical parts of the facility to continue to function during, and immediately after, the occurrence of a natural hazard;
- provide recommendations for implementation of short term measures;
- prepare cost estimates for retrofitting in the short term.

The full text of the Terms of Reference is given in Appendix A.

1.3 The Facility

Construction of the original QEH was completed in 1964. Since then, various ancillary buildings and extensions to the core hospital building have been constructed, the most recent extension having been completed in 1993.

The hospital facility (see photo 1) comprises several buildings, most of which have been connected to the central core, thus providing covered access to all critical parts of the facility.

A sketch (not to scale) is provided in Appendix B to identify the respective locations of each of the various entities comprising the overall facility.