# SECTION 4

## DISCUSSION

In SEC 1. 101.2 of the requirements of the CUBiC (1985) it has been stated that the code should be applied to the design, construction, demolition, removal, relocation, maintenance and occupancy of existing buildings. It does not provide for matters in other written Laws or in the rules and regulations.

Disaster mitigation is a new concept in the construction industry of Trinidad and Tobago. This was expressed by most of the personnel interviewed. Discussions indicate that there is a consciousness among architects, engineers and health service managers as to the importance of disaster mitigation in the design, construction and retrofitting of health care facilities.

In spite of this appreciation by personnel involved in disaster mitigation health care facilities are being designed, constructed and refurbished with limited consideration for disaster mitigation because of the initial capital cost.

As stated earlier, the outline of Joint Initiative Programme (J.I.P) Works (1993) indicate areas where development is to

occur at an estimated cost of sixty nine million Trinidad and Tobago dollars ($69m TT). This seems to be an opportune moment in the history of Trinidad and Tobago to introduce the necessary disaster mitigation measures in the National Health Sector as this is only one of several development projects being undertaken.

A listing of construction of health centres under an Inter American Development Project can be viewed in Appendix II. A listing of development projects undertaken in 1993 is also included for comparison.

In the review of literature McDonald (1992) identified areas where Governments actions can sustain development. All areas are important but the areas of most importance are those which affect policy, establishment and enforcement of adequate structural standards, sensitization of technical staff and training.

The study found that 64% of the architects and engineers directly involved in disaster mitigation were unaware of the publication on disaster mitigation guidelines for hospitals and other health care facilities in the Caribbean. This suggests that update for technical personnel in the field of disaster mitigation is essential.

Structural integrity of hospitals and other health care facilities is only one part of the disaster prevention formula as stated by de Ville de Goyet (1993). Education among professionals and the public is essential to increase and maintain preparedness.

Discussion has revealed that it is the opinion of some decision makers that to implement disaster mitigation measures in the health sector will be too costly. Commitment for rebuilding health care facilities is highest following a natural disaster (de Ville de Goyet, 1993). Is it possible to find the same level of commitment to retrofit health care facilities in Trinidad and Tobago at a time when development works on these very facilities are taking place?
The aim of the Ministry of Health in its development programme is to make the working environment more conducive to work in the hope that it will increase staff morale and promote a higher standard of health care delivery. Disaster mitigation measures are not a priority and as such is not given the focus needed for its implementation.

There seems to be more collaboration needed with Private Firms, Government Ministries and International agencies for disaster mitigation to be implemented in its entirety. With the recent problem of flooding much collaboration is needed between Government Ministries.

Flooding is a serious problem in Trinidad and Tobago because of inadequate backup structures. In some areas dredging of rivers have reduced the risk of floods.

## CONCLUSION

This study was undertaken to determine the extent to which disaster mitigation activities are used and to explore the usefulness of mitigation guidelines in the health sector of Trinidad and Tobago.

It has been found that the time to implement disaster mitigation is now since so much is happening in the constructing and refurbishing of health care facilities in Trinidad and Tobago.

What has resulted is that the cost of having initial assessments is reported to be prohibitive and tests may be destructive to existing infrastructure. Disaster mitigation is in the consciousness of personnel who can make the difference to its implementation. However it seems that there needs to be a change in the culture which exists in the agencies involved in disaster mitigation and in the attitude of personnel.

In spite of the above recorded difficulties if development is to be sustainable, disaster mitigation activities must be included in the legislation in Trinidad and Tobago.

**RECOMMENDATIONS**

1 Legislation by Government to make the implementation of disaster mitigation measures Law when constructing and retrofitting health care facilities.

2. Clear guidelines as to the role and function of personnel to be involved in supervision and monitoring of the implementation of disaster mitigation measures in the constructing and retrofitting of health care facilities.

3. Training of personnel in the maintenance fields on the introduction of disaster mitigation measures in their practice. Also written guidelines should be circulated within workshops on what disaster mitigation measures should be taken. This should be done on a regular basis.

4. Collaboration with Inter governmental and International agencies involved with disaster mitigation is essential component for encouraging its implementation in Trinidad and Tobago. Involvement of the Private sector such as Architectural, Engineering, Construction Firms and

Insurance companies is also essential if mitigation measures are to be implemented.

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# APPENDIX I

## LIST OF QUESTIONS TO GUIDE INTERVIEW

1. What disaster mitigation measures are incorporated in the design and construction of new health care facilities?

2. What is the system of approval for construction of new health care facilities. How is disaster mitigation included?

3. What provisions are made for the supervision and monitoring of new health care facilities when they are being construction?

4. How are disaster mitigation measures included in existing health care facilities

5. What difficulties are encountered when retrofitting existing health care facilities.

6. What types of assessments are done on health care facilities.

7. How is disaster mitigation incorporated in the preventive maintenance of health care facilities?

8. Please give an example of disaster mitigation activities undertaken in a recently refurbished health facility.

9. Does intersectoral collaboration have an impact on the implementation of disaster mitigation activities of health care facilities. How?

10. What is the objective of the Ministry of Health when constructing and retrofitting health care facilities?

11. What mitigation measures which are proposed to occur when constructing and retrofitting health care facilities?

12. Is mitigation guidelines used in the construction of health care facilities? How applicable is it?

# APPENDIX II

## LISTING OF CONSTRUCTION/REFURBISHMENT OF HEALTH CARE FACILITIES

**Health Centers constructed under Inter America Development Bank Programme**

Grande Riviere Health Centre .....1977

Toco Health Centre.....1977

Mathura Health Centre.....1975

La Coteaux Health Centre..... 1977

Coryal Health Centre..... 1977

Tunapuna Health Centre.....1980

Debe Health Centre.....1975

Petit Valley Health Centre.....1975

St Joseph Health Centre.....1977

Chaguanas Health Centre.....1974

Flanigan Town Health Centre.....1980

Oxford street Health Centre.....1975

Granville Health Centre .....1979

Point Fortin Health Centre.....1975

Claxton Bay Health Centre.....1977

Todd's Road Health Centre.....1979

Tabaquite Health Centre.....1976

Maracas Health Centre.....1977

Freeport Health Centre .....1975

La Romain Health Centre.....1973

Valencia Health Centre..... .....1975

Penal Health Centre.....1975

Gasparillo Health Centre .....1959

Indian Walk Health Centre.....1975

Arouca Health Centre.....1977

Success Village Health Centre.....1977

San Juan Health Centre.....1977

Cumuto Health Centre.....1976

Oropouche Health Centre .....1978

Manzanilla Health Centre.....1975

Williamsville Health Centre.....1978

Refurbishment and alteration of children's convalescent home San Fernando.....1980

Refurbishment of Doctor's Quarters Siparia.....1986

Increase of water supply/storage system Caura Hospital.....1984

**Projects undertaken on hospital facilities in 1993**

Port of Spain General Hospital

1. Refurbishment of Medical Interns' Flats
2. Refurbishment of Central Block (Wards)

San Fernando General Hospital

1. Extension and upgrading of Operating Theatre I
2. Refurbishment of Nurses' Hostel

St Ann's Hospital

1. Refurbishing of Female Block
2. Upgrading of electrical supply system
3. Upgrading of environment
4. Refurbishing of Ward Area and Boys' Ward

Tunapuna Rehabilitation Center

1 Refurbishment to building

**Health center (H/C) and other facilities in 1993**

Refurbishment of Couva Extended Centre (ECC)

Refurbishment of Couva Health Centre (ongoing)

Construction of new H/C at Gran Couva (ongoing)

Refurbishment & Extension of Princes Town H/C & Hospital

Refurbishment & Extension of Lengua H/C

Construction of new H/C at La Romain

Refurbishment & Extension of Penal Rock Road H/C

Refurbishment & Extension of Siparia H/C

Construction of County Health Administrative Building, St Patrick

Refurbishment & Extension of Fyzabad H/C

Refurbishment of Point Fortin Accident & Emergency

Refurbishment of Point Fortin ECC

Construction of new H/C at Chatam

Construction of new H/C at La Horquetta, Arouca

Construction of new H/C at Maloney

Construction of new H/C at San Souci

Refurbishment of Oxford Street Health Centre

Refurbishment of Sangre Grande ECC

Refurbishment of Grande Riviere Health Centre

Refurbishment of Tacarigua ECC

Refurbishment of Toco H/C

Refurbishment of Cumana Health Centre

Refurbishment of Morvant H/C