4.1 INTRODUCTION

The guidelines in this section are applicable for steel structure and are intended to provide minimum structural design requirements for steel buildings and other structures fabricated and erected with structural steel. The guidelines are intended to give a general idea of the basic requirements for steel structures while designing structures within the CED Trakhees jurisdiction.

Engineers shall refer to the applicable codes for the detailed technical guidance and requirements. It is anticipated that the use of these guidelines will result in a uniform design and construction of buildings throughout projects in CED-Trakhees jurisdiction.

Any requests for variations to the guidelines presented must be fully documented and presented to the CED-Trakhees for review and acceptance prior to any work commencement.

The design shall meet all relevant standards for safety, durability, fire resistance and serviceability. The designer shall investigate alternative systems and shall achieve optimized economical and constructible solution.

Sections in design guidelines for building structures shall be referred to where indicated.

4.2 APPLICABLE CODES

The following codes are permitted for design of steel structures. Design codes not listed in this document shall be submitted for review and approval prior to adopting in the design. Consultant should ensure that selected design standards are the latest editions and fully compatible with CED's design regulations & guidelines.

4.2.1 DEAD AND LIVE LOADS

1. BS 6399: Part 1 'Loading For Buildings: Code of Practice for Dead and Imposed Loads'.
2. BS 6399: Part 3 'Loading For Buildings: Code of Practice for Imposed Roof Loads'
3. ASCE 7: 'Minimum Design Loads for Buildings and Other Structures', Chapter 3 'Dead Loads' and Chapter 4 'Live Loads'
4. Adopted dead and live loads shall satisfy recommendations of the Dubai Municipality, CED - TRAKHEES and other relevant statutory authorities.

4.2.2 SEISMIC LOADS

1. UBC 1997, Volume 2, 'Structural Engineering Design Provisions', Division IV 'Earthquake Design'
2. Zone 2A shall be adopted for all structures.
3. For special steel structures and tall buildings, relevant sections of structural design guidelines for building structures are applicable.

4.2.3 WIND LOAD

1. ASCE 7: 'Minimum Design Loads for Buildings and Other Structures' - Chapter 6. Design shall be based on basic wind velocity of 45 m/s.
2. For all structures where wind loads are applied as per codes, other directions than the two orthogonal ones to be investigated for ultimate and serviceability limit states. The same shall be carefully studied for irregular buildings.
3. For special steel structures and tall buildings, relevant sections of structural design guidelines for building structures are applicable.

4.2.4 DESIGN CODES

1. BS 5950: 'Structural Use of Steelwork in Buildings'.
2. AISC 360: Specification for Structural Steel Buildings
3. UBC 1997, Volume 2, 'Structural Engineering Design Provisions'.
4. IBC 'International Building Code', excluding seismic design provisions.
5. For codes on concrete and other elements used in steel buildings, refer to codes listed in structural design guidelines for building structures.

4.3 PERFORMANCE CRITERIA - ANALYSIS, DESIGN AND DETAILING

The following sections present the analysis, design and detailing criteria with particular reference to normal and low to medium rise steel buildings and structures. For special steel structures and tall steel buildings, detailed performance criteria given in guidelines for building structures shall be referred to and the relevant sections shall be considered in the design.