DEPARTMENT OF MUNICIPAL AFFAIRS

دائـرة الـشـؤون الـبـلـديـة

بلديـة المنطقـة الغربيـة
WESTERN REGION MUNICIPALITY

بلديـة مدينـة العين
AL AIN CITY MUNICIPALITY

بلديـة مدينـة أبوظبـي
ABU DHABI CITY MUNICIPALITY

THE CODE HANDBOOK

ABU DHABI INTERNATIONAL BUILDING CODES

www.abudhabibuildingcodes.ae

The late
Sheikh Zayed Bin Sultan Al Nahyan

"We must not rely on oil alone as the main source of our national income. We have to diversify the sources of our revenue and construct economic projects that will ensure a free, stable and dignified life for the people."

H.H. Sheikh

Khalifa Bin Zayed Al Nahyan

President of the United Arab Emirates

H.H. Sheikh

Mohammed Bin Zayed Al Nahyan

Crown Prince of Abu Dhabi and Deputy Supreme Commander of the U.A.E Arm Forces

Dear Handbook Users

This handbook is produced to provide you with a brief description of each of the new six codes and help you easily navigate through them. For the detailed code provisions, please refer to the actual code books or the soft copy provided with this handbook:

The Abu Dhabi International Building Code (ADIBC)

The Abu Dhabi International Mechanical Code (ADIMC)

The Abu Dhabi International Energy Conservation Code (ADIECC)

The Abu Dhabi International Fuel Gas Code (ADIFGC)

The Abu Dhabi International Property Maintenance Code (ADIPMC)

The Abu Dhabi International Private Sewage Disposal Code (ADIPSDC)

For more information Please visit the Code website at:

www.abudhabibuildingcodes.ae

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The Higher Building Code Committee:

Department of Municipal Affairs (DMA)

Environment Agency, Abu Dhabi

Abu Dhabi Urban Planning Council (UPC)

Directorate General of Civil Defence

Abu Dhabi Future Energy Company (MASDAR)

Abu Dhabi Quality and Conformity Council (QCC)

Abu Dhabi Tourism Authority (TDIC)

Abu Dhabi Water & Electricity Authority (ADWEA)

Abu Dhabi City Municipality (ADM)

Al Ain Municipality (AAM)

Western Region Municipality (WRM)

Higher Corporation for Specialized Economic Zones (ZonesCorps)

Key Stakeholders and Contributors:

Abu Dhabi Educational Council (ADEC)

Abu Dhabi Airport Company (ADAC)

Abu Dhabi Gas Industries (GASCO)

Abu Dhabi Sewage Service Company (ADSSC)

Emirate Standardization Meteorology (ESMA)

International Code Council (ICC)

Musanada

National Center of Metrology and Seismology (NCMS), Presidential Affairs

Regulation & Supervision Bureau (RSB)

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PREFACE

Introduction

Since 2009, Department of Municipal Affairs (DMA) has been pursuing this strategic initiative to review the current state of regulations (code) governing the construction of buildings which clearly made evident the need for more comprehensive and updated construction codes. The Abu Dhabi Code Program (the Program) takes a holistic approach to improve the building and construction industry by adopting state of the art building codes, professionalizing the occupations and practices in this sector, engaging the stakeholders and coordinating with other government agencies who have direct impact on this industry.

These Abu Dhabi Construction Codes are developed to meet the needs of the community through a set of regulations that safeguard the public health and safety in all communities, large and small.

These Codes establish minimum requirements for prescriptive and performance-related provisions as they apply to the Emirate of Abu Dhabi. Based on the International Family of Codes (I-Codes) published by the International Code Council (ICC), these Codes are founded on broad-based principles that make possible the use of new materials, building designs and methods of construction. These Codes have been reviewed and customized for local conditions through the efforts of many stakeholders.

Development of the User Guide for the International Building Codes in the Emirate of Abu Dhabi

As a first step into adopting the New Codes, the first edition of the Abu Dhabi Building Codes Guide was developed by the Emirate of Abu Dhabi's Department of Municipal Affairs (DMA) along with work groups representing different stakeholders and representation from the three municipalities of the Emirate. This comprehensive guide to the I-Codes proven very effective as it guided the designers, builders and regulators on the proper application of the codes.

Adoption of the Codes for the Emirate of Abu Dhabi

The use of these codes within the Abu Dhabi Emirate is accomplished through adoption by reference in accordance with proceedings established by the Emirate's jurisdictional laws. Through the adoption of the International Codes, the Abu Dhabi Emirate has established the provisions and laws necessary for the application and enforcement of these provisions across the Emirate as well as the appropriate judicial proceedings for correcting any violations of the adopted codes.

Code Customization Phases

Phase I

This phase enabled the local practitioners to apply the new codes and be ready for a more comprehensive adaptation of the new codes to the Abu Dhabi environment. This phase started since May 2009 and the following has been accomplished:

1. The adoption of the International Building Code and the other supporting Codes
2. Issuance of the Abu Dhabi Code Guide Book on use of the International Codes,
3. Government and major developers started the use of the I-Codes to design and construct their projects.

Phase II

1. In coordination with 16 government and public Stakeholders and working with technical teams representing them, the I-Codes were reviewed and customized for adaptation to the Abu Dhabi environment.
2. All agreed upon code amendments resulted from these work groups constituted the Abu Dhabi Amendments to the following Six Codes:

The Six Codes are:

- **The Abu Dhabi International Building Code (ADIBC)**
- **The Abu Dhabi International Energy Conservation Code (ADIECC)**
- **The Abu Dhabi International Fuel Gas Code (ADIFGC)**
- **The Abu Dhabi International Mechanical Code (ADIMC)**
- **The Abu Dhabi International Private Sewage Disposal Code (ADIPSDC)**
- **The Abu Dhabi International Property maintenance Code (ADIPMC)**

Two National Standards were subject to amendments:

- **ICC/ANSI A117.1**
- **ACI 318**

The Plumbing and Fire Codes

This initial adoption of the Abu Dhabi codes will not include the International Plumbing and the Fire codes as similar codes are currently in use by the construction industry in Abu

Dhabi. Joint committees will be formed between DMA and the respective agencies having jurisdiction to harmonize these codes with the IPC and IFC. For subjects and matters not provided for in the UAE Fire Code of Practice or the Uniform Plumbing Code of Abu Dhabi Emirate, the International Fire Code (IFC) or the International Plumbing Code (IPC) shall be consulted.

Future Code Cycles

The Abu Dhabi Department of Municipal affairs is committed to maintaining the codes current and updated following the ICC code revision cycles. These updates will be accomplished via technical committees whose members will consist of local government personnel, as well as those from academia, consulting firms, oil industry, major developers and stakeholders within the Abu Dhabi Emirate. The responsibilities of the technical committees are to review and draft the required amendments to the International Codes following the ICC code cycles.

Technical committees will include but may not be limited to:

- Administration and Property Maintenance
- Building – Architectural
- Building - Structural, IBC Chapters 16-26
- Accessibility
- Energy Conservation
- Fire Protection and Life Safety
- Plumbing/Private Sewage Disposal
- Mechanical and Fuel Gas
- Green Construction
- Private Residence (Villa)
- Electrical

Identification of Amended Language

In the adopted I-Codes, solid vertical lines in the margins within the body of the codes indicate a technical change from the requirements of the previous edition. Deletion indicators in the form of an arrow (➨) are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or in a table has been deleted.

Text in the Abu Dhabi Amendments' Document

In the Amendments' document, text shown with a Strikethrough is "Deleted", and Underlined is "New"

Coordination between the International Codes

The six codes are adopted as a family of codes and will be complimented by other I-Codes as needed. When adopted together, as they are by the Abu Dhabi Emirate, there should be no conflict of any of the technical provisions. As multiple model codes are adopted by the Abu Dhabi Emirate, should a question of enforcement authority occur, the Department of Municipal Affairs will evaluate the issue in order to establish the appropriate enforcement agency.

Italicized Terms

Selected terms set forth in the definitions chapters of the adopted codes, are italicized where they appear in code text. Such terms are not italicized where the definition set forth in the definitions chapter does not impart the intended meaning in the use of the term. The terms selected have definitions which the user should read carefully to facilitate better understanding of the codes.

Arrangement and Format of the 2009 Editions of the International Codes

The I-Codes are arranged and organized to follow sequential steps that generally occur during a design, plan review or inspection procedure. Users should gain a better understanding of the requirements outlined in each document by researching the contents of all applicable code sections.

Training

The Department of Municipal Affairs in collaboration with the International Code Council (ICC) and local colleges and universities has been, and will continue to provide the necessary training programs for all affected professionals, public and private, in order to assure a smooth transition to these adopted codes. Available training has been provided with interactive classroom instruction by highly qualified ICC instructors as well as through online courses and webinars. A structured training and "professional certification" program is also being offered for municipal employees and construction professionals in order to insure a high level of professional competence is achieved throughout the Emirate.

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This project is designed and constructed in accordance with the Abu Dhabi International Building Codes

Etihad Towers

Owner/developer:	Sheikh Suroor Projects Development (SSPD)
Architects:	DBI Design
Consultants:	AECOM
Contractor:	Arabian Construction Company
Cost:	$961.3 Million
Area:	460,000 Sq.Meter

ADIBC®

ABU DHABI INTERNATIONAL BUILDING CODE

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Based On the 2009 International Building Code

Abu Dhabi International Building Codes (ADIBC) 2013

A - General Description of ADIBC

The Abu Dhabi International Building Code (ADIBC) is a code that provides minimum requirements to safeguard the public health, safety and general welfare of the occupants of new and existing buildings and structures. The ADIBC is fully compatible with the other Abu Dhabi International codes, including: Abu Dhabi International Energy Conservation Code (ADIECC), Abu Dhabi International Fuel Gas Code (ADIFGC), Abu Dhabi International Mechanical Code (ADIMC), Abu Dhabi International Private Sewage Disposal Code (ADIPSDC) and Abu Dhabi International Property Maintenance Code (ADIPMC).

The ADIBC addresses structural strength, means of egress, sanitation, adequate lighting and ventilation, accessibility, energy conservation and life safety in regards to new and existing buildings, facilities and systems.

The codes are promulgated on a 3-year cycle to allow for new construction methods and technologies to be incorporated into the codes. Alternative materials, designs and methods not specifically addressed in the code can be approved by the Building official where the proposed materials, designs or methods comply with the intent of the provisions of the code (see Section 104.11).

The ADIBC applies to all occupancies and all types of buildings and structures unless exempted, including one - and two-family dwellings and townhouses.

B - Arrangement and Format of ADIBC

Before applying the requirements of the ADIBC, it is beneficial to understand its arrangement and format. The ADIBC, like other codes based on ICC published codes, is arranged and organized to follow sequential steps that generally occur during a plan review and inspection.

Chapters	Subjects	Chapters	Subjects
1-2	Administration and definitions	12-13, 27-30	Building systems, such as lighting, HVAC, plumbing fixtures, elevators
3	Use and occupancy classifications	14-26	Structural components—performance and stability
4, 31	Special requirements for specific occupancies or elements	32	Encroachment outside of property lines
5-6	Height and area limitations based on type of construction	33	Safeguards during construction
7-9	Fire resistance and protection requirements	34	Existing building allowances
10	Requirements for evacuation	35	Referenced standards
11	Specific requirements to allow use and access to a building for persons with disabilities	Appendices A-K	Appendices

The ADIBC requirements for smoke control systems, and smoke and fire dampers are directly correlated to the requirements of the ADIMC. ADIBC Chapter 28 is a reference to the ADIMC and the ADIFGC for chimney, fireplaces and barbeques, and all aspects of mechanical systems. The following chapters/ sections of the ADIBC are correlated with the ADIMC:

ADIBC Chapter/Section	ADIMC Chapter/Section	Subject
Section 716	Section 607	Smoke and fire dampers
Section 909	Section 513	Smoke control

C - Chapter By Chapter Description of ADIBC

The following is a chapter-by-chapter synopsis of the scope and intent of the provisions of the Abu Dhabi International Building Code.

Chapter 1 Scope and Administration

Chapter 1 establishes the limits of applicability of the code and describes how the code is to be applied and enforced. Chapter 1 is in two parts, Part 1-Scope and Application (Sections 101-102) and Part 2-Administration and Enforcement (Sections 103-116). Section 101 identifies which buildings and structures come under its purview and references other Abu Dhabi and ICC codes as applicable. Standards and codes are scoped to the extent referenced (see Section 102.4).

The building code is intended to be adopted as a legally enforceable document and it cannot be effective without adequate provisions for its administration and enforcement. The provisions of Chapter 1 establish the authority and duties of the code official appointed by the jurisdiction having authority and also establish the rights and privileges of the design professional, contractor and property owner.

Chapter 1 Contents			
PART 1—SCOPE AND APPLICATION			
Section	Subject	Section	Subject
101	General	102	Applicability
PART 2 - ADMINISTRATION AND ENFORCEMENT			
103	Department of Building Safety	110	Inspections
104	Duties and Powers of Building Official	111	Certificate of Occupancy
105	Permits	112	Service Utilities
106	Floor and Roof Design Loads	113	Board of Appeals
107	Submittal Documents	114	Violations
108	Temporary Structures and Uses	115	Stop Work Order
109	Fees	116	Unsafe Structures and Equipment

Chapter 2 Definitions

All terms that are defined in the code are listed alphabetically in Chapter 2. Terms are defined in Chapter 2 or there is a reference to the section where the definition is located. While a defined term may be listed in one chapter or another, the meaning is applicable throughout the code.

Codes are technical documents and every word, term and punctuation mark can impact the meaning of the code text and the intended results. The code often uses terms that have a unique meaning in the code and the code meaning can differ substantially from the ordinarily understood meaning of the term as used outside of the code. Where understanding of a term's definition is especially key to or necessary for understanding a particular code provision, the term is shown in italics wherever it appears in the code. This is true only for those terms that have a meaning that is unique to the code. In other words, the generally understood meaning of a term or phrase might not be sufficient or consistent with the meaning prescribed by the code; therefore, it is essential that the code-defined meaning be known.

Definitions are deemed to be of prime importance in establishing the meaning and intent of the code text that uses the terms. The user of the code should be familiar with and consult this chapter because the definitions are essential to the correct interpretation of the code and because the user may not be aware that a term is defined.

Chapter 2 Contents	
Section	Subject
201	General
202	Definitions

Chapter 3 Use and Occupancy Classification

Chapter 3 provides for the classification of buildings, structures and parts thereof based on the purpose or purposes for which they are used. Section 302 identifies the groups into which all buildings, structures and parts thereof must be classified. Sections 303 through 312 identify the occupancy characteristics of each group classification. In some sections, specific group classifications having requirements in common are collectively organized such that one term applies to all. For example, Groups A-1, A-2, A-3, A-4 and A-5 are individual groups for assembly-type buildings. The general term "Group A," however, includes each of these individual groups. Other groups include Business (B), Educational (E), Factory (F-1, F-2), High Hazard (H-1, H-2, H-3, H-4, H-5), Institutional (I-1, I-2, I-3, I-4), Mercantile (M), Residential (R-1, R-2, R-3, R-4), Storage (S-1, S-2) and Utility (U). In some occupancies, the smaller number means a higher hazard, but that is not always the case.

Defining the use of the buildings is very important as it sets the tone for the remaining chapters of the code. Occupancy works with the height, area and construction type requirements in Chapters 5 and 6, as well as the special provisions in Chapter 4, to determine "equivalent risk," or providing a reasonable level of protection or life safety for building occupants. The determination of equivalent risk involves three interdependent considerations: (1) the level of fire hazard associated with the specific occupancy of the facility; (2) the reduction of fire hazard by limiting the floor area(s) and the height of the building based on the fuel load (combustible contents and burnable building components) and (3) the level of overall fire resistance provided by the type of construction used for the building. The greater the potential fire hazards indicated as a function of the group, the lesser the height and area allowances for a particular construction type.

Occupancy classification also plays a key part in organizing and prescribing the appropriate protection measures. As such, threshold requirements for fire protection and means of egress systems are based on occupancy classification (see Chapters 9 and 10). Other sections of the code also contain requirements respective to the classification of building groups. For example, Section 706 deals with requirements for fire wall fire-resistance ratings that are tied to the

occupancy classification of a building and Section 803.9 contains interior finish requirements that are dependent upon the occupancy classification. The use of the space, rather than the occupancy of the building is utilized for determining occupant loading (Section 1004) and live loading (Section 1607).

Chapter 3 Contents:

Chapter 4 Special Detailed Requirements Based On Use and Occupancy

Chapter 4 contains the requirements for protecting special uses and occupancies, which are supplemental to the remainder of the code. Chapter 4 contains provisions that may alter requirements found elsewhere in the code; however, the general requirements of the code still apply unless modified within the chapter. For example, the height and area limitations established in Chapter 5 apply to all special occupancies unless Chapter 4 contains height and area limitations. In this case, the limitations in Chapter 4 supersede those in other sections. An example of this is the height and area limitations for open parking garages given in Section 406.3.5, which supersede the limitations given in Section 503.

In some instances, it may not be necessary to apply the provisions of Chapter 4. For example, if a covered mall building complies with the provisions of the code for Group M, Section 402 does not apply; however, other sections that deal with a use, process or operation must be applied to that specific occupancy, such as stages and platforms, special amusement buildings and hazardous materials (Sections 410, 411 and 414).

The chapter includes requirements for buildings and conditions that apply to one or more groups, such as high-rise buildings, underground buildings or atriums. Special uses may also imply specific occupancies and operations, such as for Group H, hazardous materials, application of flammable finishes, drying rooms, organic coatings and combustible storage or hydrogen cutoff rooms, all of which are coordinated with the IFC. Unique consideration is taken for special use areas, such as covered mall buildings, motor-vehicle-related occupancies, special amusement buildings and aircraft-related occupancies. Special facilities within other occupancies are considered, such as stages and platforms, motion picture projection rooms and storm shelters. Finally, in order that the overall package of protection features can be easily understood, unique considerations for specific occupancies are addressed: Groups I-1, I-2, I-3, R-1, R-2, R-3 (by definition R-4), ambulatory care facilities and live/work units.

Chapter 4 Contents:			
Section	**Subject**	**Section**	**Subject**
401	Scope	**413**	Combustible Storage
402	Covered Mall and Open Mall Buildings	**414**	Hazardous Materials
403	High-rise Buildings	**415**	Groups H-1, H-2, H-3, H-4 and H-5
404	Atriums	**416**	Application of Flammable Finishes
405	Underground Buildings	**417**	Drying Rooms
406	Motor-vehicle-related Occupancies	**418**	Organic Coatings
407	Group I-2	**419**	Live/work Units
408	Group I-3	**420**	Groups I-1, R-1, R-2, R-3
409	Motion Picture Projection Rooms	**421**	Hydrogen Cutoff Rooms
410	Stages and Platforms	**422**	Ambulatory Health Care Facilities
411	Special Amusement Buildings	**423**	Storm Shelters
412	Aircraft-related Occupancies		

Chapter 5 General Building Heights and Areas

Chapter 5 contains the provisions that regulate the minimum type of construction for area limits and height limits based on the occupancy of the building. Height and area increases (including allowances for basements, mezzanines and equipment platforms) are permitted based on open frontage for fire department access, and the type of sprinkler protection provided and separation (Sections 503-506, 509). These thresholds are reduced for buildings over three stories in height in accordance with Section 506.4.1. Provisions include the protection and/or separation of incidental accessory occupancies (Table 508.2.5), accessory occupancies (Sections 508.2) and mixed uses in the same building (Sections 506.5, 508.3, 508.4 and 509). Unlimited area buildings are permitted in certain occupancies when they meet special provisions (Section 507).

Table 503 is the keystone in setting thresholds for building size based on the building's use and the materials with which it is constructed. If one then looks at Table 503, the relationship among group classification, allowable heights and areas and types of construction becomes apparent. Respective to each group classification, the greater the fire-resistance rating of structural elements, as represented by the type of construction, the greater the floor area and height allowances. The greater the potential fire hazards indicated as a function of the group, the lesser the height and area allowances for a particular construction type.

Chapter 5 Contents:			
Section	**Subject**	**Section**	**Subject**
501	General	**506**	Building Area Modifications
502	Definitions	**507**	Unlimited Area Buildings
503	General Building Height and Area Limitations	**508**	Mixed Use and Occupancy
504	Building Height	**509**	Special Provisions
505	Mezzanines		

Chapter 6 Types of Construction

The interdependence of these fire safety considerations can be seen by first looking at Tables 601 and 602, which show the fire-resistance ratings of the principal structural elements comprising a building in relation to the five classifications for types of construction. Type I construction is the classification that generally requires the highest fire-resistance ratings for structural elements, whereas Type V construction, which is designated as a combustible type of construction, generally requires the least amount of fire-resistance-rated structural elements. The greater the potential fire hazards indicated as a function of the group, the lesser the height and area allowances for a particular construction type. Section 603 includes a list of combustible elements that can be part of a noncombustible building (Types I and II construction).

Chapter 6 Contents:			
Section			**Subject**
601	General	**602**	Construction Classification
603	Combustible Material in Type I and II Construction		

Chapter 7 Fire and Smoke Protection Features

The provisions of Chapter 7 present the fundamental concepts of fire performance that all buildings are expected to achieve in some form. This chapter identifies the acceptable materials, techniques and methods which proposed construction can be designed and evaluated against to determine a building's ability to limit the impact of fire. The fire-resistance-rated

construction requirements within Chapter 7 provide passive resistance to the spread and effects of fire. Types of separations addressed include fire walls, fire barriers, fire partitions, horizontal assemblies, smoke barriers and smoke partitions. A fire produces heat that can weaken structural components and smoke products that cause property damage and place occupants at risk. The requirements of Chapter 7 work in unison with height and area requirements (Chapter 5), active fire detection and suppression systems (Chapter 9) and occupant egress requirements (Chapter 10) to contain a fire should it occur while helping ensure occupants are able to safely exit.

Chapter 7 Contents:			
Section	**Subject**	**Section**	**Subject**
701	General	**712**	Horizontal Assemblies
702	Definitions	**713**	Penetrations
703	Fire-resistance Ratings and Fire Tests	**714**	Fire-resistant Joint Systems
704	Fire-resistance Rating of Structural Members	**715**	Opening Protectives
705	Exterior Walls	**716**	Ducts and Air Transfer Openings
706	Fire Walls	**717**	Concealed Spaces
707	Fire Barriers	**718**	Fire-resistance Requirements for Plaster
708	Shaft Enclosures	**719**	Thermal- and Sound-insulating Materials
709	Fire Partitions	**720**	Prescriptive Fire Resistance
710	Smoke Barriers	**721**	Calculated Fire Resistance
711	Smoke Partitions		

Chapter 8 Interior Finishes

This chapter contains the performance requirements for controlling fire growth within buildings by restricting interior finish and decorative materials. Past fire experience has shown that interior finish and decorative materials are key elements in the development and spread of fire. The provisions of Chapter 8 require materials used as interior finishes and decorations to meet certain flame-spread index or flame-propagation criteria based on the relative fire hazard associated with the occupancy. As smoke is also a hazard associated with fire, this chapter contains limits on the smoke development characteristics of interior finishes. The performance of the material is evaluated based on test standards.

Chapter 8 Contents:			
Section	**Subject**	**Section**	**Subject**
801	General	**805**	Combustible Materials in Type I and II Construction
802	Definitions	**806**	Decorative Materials and Trim
803	Wall and Ceiling Finishes	**807**	Insulation
804	Interior Floor Finish	**808**	Acoustical Ceiling Systems

Chapter 9 Fire Protection Systems

Chapter 9 prescribes the minimum requirements for active systems of fire protection equipment to perform the following functions: detect a fire; alert the occupants or fire department of a fire emergency; and control smoke and control or extinguish the fire. Generally, the requirements are based on the occupancy, the height and the area of the building, because these are the factors that most affect fire-fighting capabilities and the relative hazard of a specific building or portion thereof. This chapter parallels and is substantially duplicated in Chapter 9 of the International Fire Code (IFC); however, the IFC Chapter 9 also contains periodic testing criteria that are not contained in the ADIBC. In addition, the special fire protection system requirements based on use and occupancy found in ADIBC Chapter 4 are duplicated in IFC Chapter 9 as a user convenience. This chapter references the UAE Fire and Life safety code of Practice.

Chapter 9 Contents:			
Section	**Subject**	**Section**	**Subject**
901	General	**909**	Smoke Control System
902	Definitions	**910**	Smoke and Heat Vents
903	Automatic Sprinkler Systems	**911**	Fire Command Center
904	Alternative Automatic Fire Extinguishing Systems	**912**	Fire Department Connections
905	Standpipe Systems.	**913**	Fire Pumps
906	Portable Fire Extinguishers.	**914**	Emergency Responder Safety Features
907	Fire Alarm and Detection Systems	**915**	Emergency Responder Radio Coverage
908	Emergency Alarm Systems		

Chapter 10 Means of Egress

The general criteria set forth in Chapter 10 regulating the design of the means of egress are established as the primary method for protection of people in buildings by allowing timely relocation or evacuation of building occupants. Both prescriptive and performance language is utilized in this chapter to provide for a basic approach in the determination of a safe exiting system for all occupancies. It addresses all portions of the egress system (i.e., exit access, exits and exit discharge) and includes design requirements as well as provisions regulating individual components.

The requirements throughout Chapter 10 detail the size, arrangement, number and protection of means of egress components. Functional and operational characteristics also are specified for the components that will permit their safe use without special knowledge or effort. The means of egress protection requirements work in coordination with other sections of the code, such as protection of vertical openings (see Chapter 7), interior finish (see Chapter 8), fire suppression and detection systems (see Chapter 9) and numerous others, all having an impact on life safety. Chapter 10 of the IBC is duplicated in Chapter 10 of the IFC; however, the IFC contains two additional sections on the means of egress system in existing buildings. This chapter references the UAE Fire and Life safety code of Practice.

Chapter 10 Contents			
Section	**Subject**	**Section**	**Subject**
1001	Administration	**1016**	Exit Access Travel Distance
1002	Definitions	**1017**	Aisles
1003	General Means of Egress	**1018**	Corridors
1004	Occupant Load	**1019**	Egress Balconies
1005	Egress Width	**1020**	Exits
1006	Means of Egress Illumination	**1021**	Number of Exits and Continuity
1007	Accessible Means of Egress	**1022**	Exit Enclosures
1008	Doors, Gates and Turnstiles	**1023**	Exit Passageways
1009	Stairways	**1024**	Luminous Egress Path Markings
1010	Ramps	**1025**	Horizontal Exits
1011	Exit Signs	**1026**	Exterior Exit Ramps and Stairways
1012	Handrails	**1027**	Exit Discharge
1013	Guards	**1028**	Assembly
1014	Exit Access	**1029**	Emergency Escape and Rescue
1015	Exit and Exit Access Doorways		

Chapter 11 Accessibility

Chapter 11 contains provisions that set forth requirements for accessibility of buildings and their associated sites and facilities for people with physical disabilities. The fundamental philosophy of the code on the subject of accessibility is that everything is required to be accessible. This is reflected in the basic applicability requirement (see Section 1103.1). The code's scoping requirements then address the conditions under which accessibility is not required in terms of exceptions to this general mandate. While the ADIBC contains scoping provisions for accessibility (e.g., what, where and how many), ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities, is the referenced standard for the technical provisions (i.e., how).

There are many accessibility issues that not only benefit people with disabilities, but also provide a tangible benefit to people without disabilities. This type of requirement can be set forth in the code as generally applicable without necessarily identifying it specifically as an accessibility-related issue. Such a requirement would then be considered as having been "mainstreamed." For example, visible alarms are located in Chapter 9 and ramp requirements are addressed in Chapter 10.

Accessibility criteria for existing buildings are addressed in Section 3411.

Chapter 11 Contents			
Section	**Subject**	**Section**	**Subject**
1101	General	**1106**	Parking and Passenger Loading Facilities
1102	Definitions	**1107**	Dwelling Units and Sleeping Units
1103	Scoping Requirements	**1108**	Special Occupancies
1104	Accessible Route	**1109**	Other Features and Facilities
1105	Accessible Entrance	**1110**	Signage

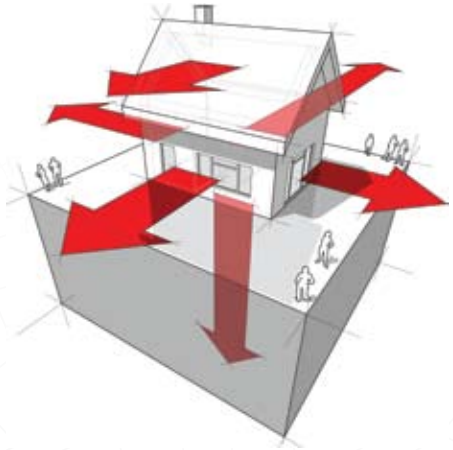
Chapter 12 Interior Environment

Chapter 12 provides minimum standards for the interior environment of a building. The standards address the minimum sizes of spaces, minimum temperature levels, and minimum light and ventilation levels. The collection of requirements addresses limiting sound transmission through walls, ventilation of attic spaces and under floor spaces (crawl spaces). Finally, the chapter provides minimum standards for walls, partitions and floors to resist water intrusion and damage in rooms such as toilet and shower facilities, where water is frequently in use.

Chapter 12 Contents			
Section	**Subject**	**Section**	**Subject**
1201	General	**1206**	Yards or Courts
1202	Definitions	**1207**	Sound Transmission
1203	Ventilations	**1208**	Interior Space Dimensions
1204	Temperature Control	**1209**	Access to Unoccupied Spaces
1205	Lighting	**1210**	Surrounding Materials

Chapter 13 Energy Efficiency

The purpose of Chapter 13 is to provide minimum design requirements that will promote efficient utilization of energy in buildings. The requirements are directed toward the design of building envelopes with adequate thermal resistance and low air leakage, and toward the design and selection of mechanical, water heating, electrical and illumination systems that promote effective use of depletable energy resources. For the specifics of these criteria, Chapter 13 requires design and construction in compliance with the Abu Dhabi International Energy Conservation Code (ADIECC).



Chapter 13 Contents	
Section	**Subject**
1301	General
See Abu Dhabi International Energy Conservation Code (ADIECC).	

Chapter 14 Exterior Walls

This chapter addresses requirements for exterior walls of buildings. Minimum standards for wall covering materials, installation of wall coverings and the ability of the wall to provide weather protection are provided. This chapter also requires exterior walls that are close to plot lines, or that are bearing walls for certain types of construction, to comply with the minimum fire-resistance ratings specified in Chapters 6 and 7. The installation of each type of wall covering, be it wood, masonry, vinyl, metal composite material or an exterior insulation and finish system, is critical to its long-term performance in protecting the interior of the building from the elements and the spread of fire. Special attention to the use of combustible materials on the exterior of the building such as balconies, eaves, decks and architectural trim is the focus of Section 1406.

Chapter 14 Contents			
Section	**Subject**	**Section**	**Subject**
1401	General	**1405**	Installation of Wall Coverings
1402	Definitions	**1406**	Combustible Materials on the Exterior Side of Exterior Walls
1403	Performance requirements	**1407**	Metal Composite Materials (MCM)
1404	Materials	**1408**	Exterior Insulation and Finish Systems (EIFS)

Chapter 15 Roof Assemblies and Rooftop Structures

Chapter 15 provides standards for both roof assemblies as well as structures which sit on top of the roof of buildings. The criteria address roof construction and covering which includes the weather-protective barrier at the roof and, in most circumstances, a fire-resistant barrier. The chapter is prescriptive in nature and is based on decades of experience with various traditional materials. These prescriptive rules are very important for satisfying performance of one type of roof covering or another. Section 1509 addresses rooftop structures including penthouses, tanks, towers and spires. Rooftop penthouses larger than prescribed in this chapter must be treated as a story under Chapter 5.

Chapter 15 Contents			
Section	**Subject**	**Section**	**Subject**
1501	General	**1506**	Materials
1502	Definitions	**1507**	Requirements for Roof Covering
1503	Weather Protection	**1508**	Roof Insulations
1504	Performance Requirements	**1509**	Rooftop Structures
1505	Fire Classifications	**1510**	Reroofing

Chapter 16 Structural Design

Chapter 16 prescribes minimum structural loading requirements for use in the design and construction of buildings and structural components. It includes minimum design loads, as well as permitted design methodologies. Standards are provided for minimum design loads (live, dead, snow, wind, rain, flood and earthquake as well as load combinations). The application of these loads and adherence to the serviceability criteria will enhance the protection of life and property. The chapter references and relies on many nationally recognized design standards. A key standard is the American Society of Civil Engineer's Minimum Design Loads for Buildings and Other Structures (ASCE 7). Structural design needs to address the conditions of the site and location. Therefore maps of rainfall, seismic, snow and wind criteria in different regions are provided.

Chapter 16 Contents			
Section	**Subject**	**Section**	**Subject**
1601	General	**1608**	Snow Loads
1602	Definitions and Notations	**1609**	Wind Loads
1603	Construction Documents	**1610**	Soil Lateral Loads
1604	General Design Requirements	**1611**	Rain Loads
1605	Load Combinations	**1612**	Flood Loads
1606	Dead Loads	**1613**	Earthquake Loads
1607	Live Loads	**1614**	Structural Integrity

Chapter 17 Structural Tests and Special Inspections

Chapter 17 provides a variety of procedures and criteria for testing materials and assemblies, for labeling materials and assemblies, and for special inspection of structural assemblies. This chapter expands on the requirements of Chapter 1 regarding the roles and responsibilities of the building official regarding approval of building components. It also provides additional duties and responsibilities for the owner, contractor, design professionals and special inspectors. Proper assembly of structural components, proper quality of materials used, and proper application of materials are essential to ensuring that a building, once constructed, complies with the structural and fire-resistance minimums of the code and the approved design. To determine this compliance often requires continuous or frequent inspection and testing. Chapter 17 establishes these special inspection and testing standards as well as reporting of the work to the building official.

Chapter 17 Contents			
Section	**Subject**	**Section**	**Subject**
1701	General	**1709**	Contractor responsibility
1702	Definitions	**1710**	Structural Observations
1703	Approvals	**1711**	Design Strengths of Materials
1704	Special Inspections	**1712**	Alternative test procedure
1705	Statement of Special Inspections	**1713**	Test safe Load
1706	Special Inspection for Wind Requirements	**1714**	In-situ Load Test
1707	Special Inspection for Seismic Resistance	**1715**	Preconstruction Load Tests
1708	Structural Testing for Seismic Resistance	**1716**	Material and test Standards

Chapter 18 Soils and Foundations

Chapter 18 contains minimum requirements for design, construction and resistance to water intrusion of foundation systems for buildings and other structures. It provides criteria for the geotechnical and structural considerations in the selection and installation of adequate support for the loads transferred from the structure above. The uncertainties of foundation construction make it extremely difficult to address every potential failure within the text of the code. The chapter includes requirements for soils investigation and site preparation for receiving a foundation including the allowed load-bearing values for soils and for protecting the foundation from water intrusion. Section 1808 addresses the basic requirements for all foundation types. Later sections address foundation requirements that are specific to shallow foundations and deep foundations. Due care must be exercised in the planning and design of foundation systems based on obtaining sufficient soils information, the use of accepted engineering procedures, experience and good technical judgment.

Chapter 18 Contents			
Section	**Subject**	**Section**	**Subject**
1801	General	**1806**	Presumptive Load-bearing Values of Soils
1802	Definitions	**1807**	Foundation Walls, Retaining Walls and Imbedded Posts and Poles
1803	Geotechnical Investigations	**1808**	Foundations
1804	Excavation, Grading and Fill	**1809**	Shallow Foundations
1805	Damp-proofing and waterproofing	**1810**	Deep Foundations

Chapter 19 Concrete

This chapter provides minimum accepted practices to the design and construction of buildings and structural components using concrete-both plain and reinforced. Chapter 19 is formatted to parallel American Concrete Institute (ACI) 318, Building Code Requirements for Structural Concrete. The chapter also includes references to additional standards. Structural concrete must be designed and constructed to comply with this code and all listed standards. There are specific sections of the chapter addressing concrete slabs, anchorage to concrete, shotcrete, reinforced gypsum concrete and concrete-filled pipe columns. Because of the variable properties of material and numerous design and construction options available in the uses of concrete, due care and control throughout the construction process is necessary.

Chapter 19 Contents			
Section	**Subject**	**Section**	**Subject**
1901	General	**1909**	Structural Plain Concrete
1902	Definitions	**1910**	Minimum Slab Provisions
1903	Specifications for Tests and Materials	**1911**	Anchorage to Concrete – Allowable Stress Design
1904	Durability Requirements	**1912**	Anchorage to Concrete – Strength Design
1905	Concrete Quality, Mixing and Placing	**1913**	Shotcrete
1906	Formwork, Embedded Pipes and Construction Joints	**1914**	Reinforced Gypsum Concrete
1907	Details of Reinforcement	**1915**	Concrete Filled Pipe Columns
1908	Modifications to ACI 318		

Chapter 20 Aluminum

Chapter 20 contains standards for the use of aluminum in building construction. Only the structural applications of aluminum are addressed. The chapter does not address the use of aluminum in specialty products such as storefront or window framing or architectural hardware. The use of aluminum in heating, ventilating or air-conditioning systems is addressed in the Abu Dhabi International Mechanical Code (ADIMC). The chapter references national standards from the Aluminum Association for use of aluminum in building construction, AA ASM 35, Aluminum Sheet Metal Work in Building Construction , and AA ADM 1, Aluminum Design Manual . By utilizing the standards set forth, a proper application of this material can be obtained.

Chapter 20 Contents	
Section	**Subject**
2001	General
2002	Materials

Chapter 21 Masonry

This chapter provides comprehensive and practical requirements for masonry construction. The provisions of Chapter 21 require minimum accepted practices and the use of standards for the design and construction of masonry structures. The provisions address: material specifications and test methods; types of wall construction; criteria for engineered and empirical designs; required details of construction including the execution of construction. Masonry design methodologies including allowable stress design, strength design and empirical design are covered by provisions of the chapter. Also addressed are masonry fireplaces and chimneys, masonry heaters and glass unit masonry. Fire-resistant construction using masonry is also required to comply with Chapter 7. Masonry foundations are also subject to the requirements of Chapter 18.

Chapter 21 Contents			
Section	**Subject**	**Section**	**Subject**
2101	General	**2108**	Strength Design of Masonry
2102	Definitions and Notations	**2109**	Empirical Design of Masonry
2103	Masonry Construction Materials	**2110**	Glass Unit Masonry
2104	Construction	**2111**	Masonry Fireplaces
2105	Quality Assurance	**2112**	Masonry Heaters
2106	Seismic Design	**2113**	Masonry Chimneys
2107	Allowable Stress Design		

Chapter 22 Steel

Chapter 22 provides the requirements necessary for the design and construction of structural steel (including composite construction), cold-formed steel, steel joists, steel cable structures and steel storage racks. The chapter specifies appropriate

design and construction standards for these types of structures. It also provides a road map of the applicable technical requirements for steel structures. Steel is a noncombustible building material commonly associated with Types I and II construction; however, it is permitted to be used in all types of construction. The code requires that materials used in the design of structural steel members conform to designated national standards. Chapter 22 is involved with the design and use of steel materials using the specifications and standards of the American Institute for Steel Construction, the American Iron and Steel Institute, the Steel Joist Institute and the American Society of Civil Engineers.

Chapter 22 Contents			
Section	**Subject**	**Section**	**Subject**
2201	General	**2206**	Steel Joists
2202	Definitions	**2207**	Steel Cable Structures
2203	Identification and Protection of Steel for Structural Purposes	**2208**	Steel Storage Racks
2204	Connections	**2209**	Cold-formed Steel
2205	Structural Steel	**2210**	Cold-formed Steel Light-frame Construction

Chapter 23 Wood

This Chapter has been reserved in the ADIBC version due to the fact that wood construction is not common in the area. Therefore, in the event of using wood in the construction of any building, the original Chapter 23 of IBC shall be used.

Chapter 24 Glass and Glazing

This chapter establishes regulations for glass and glazing used in buildings and structures that, when installed, are subjected to wind, snow and dead loads. Engineering and design requirements are included in the chapter. Additional structural requirements are found in Chapter 16. A second concern of this chapter is glass and glazing used in areas where it is likely to have an impact on the occupants. Section 2406 identifies hazardous locations where glazing installed must either be safety glazing or blocked to prevent human impact. Safety glazing must meet stringent standards and be appropriately marked or identified. Additional standards for glass and glazing in guards, handrails, elevator hoistways and elevator cars, and in athletic facilities are provided.

Chapter 24 Contents			
Section	**Subject**	**Section**	**Subject**
2401	General	**2406**	Safety Glazing
2402	Definition	**2407**	Glass in Handrails and Guards
2403	General Requirements for Glass	**2408**	Glazing in Athletic Facilities
2404	Wind, Snow, Seismic and Dead Loads on Glass	**2409**	Glass in Elevator Hoistways and Elevator Cars
2405	Sloped Glazing and Skylights		

Chapter 25 Gypsum Board and Plaster

Chapter 25 contains the provisions and referenced standards that regulate the design, construction and quality of gypsum board and plaster. These represent the most common interior and exterior finish materials in the building industry. This chapter primarily addresses quality-control-related issues with regard to material specifications and installation requirements. Most products are manufactured under the control of industry standards. The building official or inspector primarily needs to verify that the appropriate product is used and properly installed for the intended use and location. While often simply used as wall and ceiling coverings, proper design and application are necessary to provide weather resistance and required fire protection for both structural and nonstructural building components.

Chapter 25 Contents			
Section	**Subject**	**Section**	**Subject**
2501	General	**2508**	Gypsum Construction
2502	Definitions	**2509**	Gypsum Board in Showers and Water Closets
2503	Inspection	**2510**	Lathing and Furring for Cement Plaster (Stucco)
2504	Vertical and Horizontal Assemblies	**2511**	Interior Plaster
2505	Shear Wall Construction	**2512**	Exterior Plaster
2506	Gypsum Board Materials	**2513**	Exposed Aggregate Plaster
2507	Lathing and Plastering		

Chapter 26 Plastic

The use of plastics in building construction and components is addressed in Chapter 26. This chapter provides standards addressing foam plastic insulation, foam plastics used as interior finish and trim, and other plastic veneers used on the inside or outside of a building. Plastic siding is regulated by Chapter 14. Sections 2606 through 2611 address the use of light-transmitting plastics in various configurations such as walls, roof panels, skylights, signs and as glazing. Requirements for the use of fiber reinforced polymers, fiberglass reinforced polymers and reflective plastic core insulation are also contained in this chapter. Some plastics exhibit rapid flame spread and heavy smoke density characteristics when exposed to fire. Additionally, exposure to the heat generated by a fire can cause some plastics to deform, which can affect their performance. The requirements and limitations of this chapter are necessary to control the use of plastic and foam plastic products such that they do not compromise the safety of building occupants.

Chapter 26 Contents			
Section	**Subject**	**Section**	**Subject**
2601	General	**2608**	Light-transmitting Plastic Glazing
2602	Definitions	**2609**	Light-transmitting Plastic Roof Panels
2603	Foam Plastic Insulation	**2610**	Light-transmitting Plastic Skylight Glazing
2604	Interior Finish and Trim	**2611**	Light-transmitting Plastic Interior Signs
2605	Plastic Veneer	**2612**	Fiber Reinforced Polymer and Fiberglass-Reinforced Polymer
2606	Light-transmitting Plastics	**2613**	Reflective Plastic Core Insulation
2607	Light-transmitting Plastic Wall Panels		

Chapter 27 Electrical

Since electrical systems and components are an integral part of almost all structures, it is necessary for the code to address the installation of such systems. For this purpose, Chapter 27 references the Electricity Wiring Regulations 2007, Revision 1, dated January, 2009, as promulgated by the Regulation and Supervision Bureau, Emirate of Abu Dhabi.

In addition, Section 2702 addresses emergency and standby power requirements. Such systems must comply with the International Fire Code (IFC) and referenced standards. This section also provides references to the various code sections requiring emergency and standby power, such as high-rise buildings and buildings containing hazardous materials.

Chapter 27 Contents	
Section	**Subject**
2701	General
2702	Emergency and Standby Power Systems
See the Electricity Wiring Regulations 2007, Revision 1, dated January, 2009, as promulgated by the Regulation and Supervision Bureau, Emirate of Abu Dhabi.	

Chapter 28 Mechanical Systems

Nearly all buildings will include mechanical systems. This chapter provides references to the Abu Dhabi International Mechanical Code (ADIMC) and the Abu Dhabi International Fuel Gas Code (ADIFGC) for the design and installation of mechanical systems. In addition, the chapter references Chapter 21 of the ADIBC for masonry chimneys, fireplaces and barbecues.

Chapter 28 Contents	
Section	**Subject**
2801	General
See Abu Dhabi International Mechanical Code (ADIMC).	

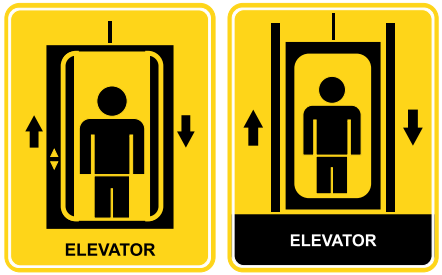
Chapter 29 Plumbing Systems

Chapter 29 regulates the minimum requirements to design and install plumbing systems that must be provided for every type of building. This chapter also regulates the flow rates of the required fixtures in various types of buildings to achieve the water conservation objective of Estidama program. This chapter provides references to the Uniform Plumbing Code– Abu Dhabi as published by the Abu Dhabi Environmental Agency and the Water Supply Regulations, January, 2009 (WRS) as published by the Regulation and Supervision Bureau. And for matters not provided for, the International Plumbing Code (IPC) shall be used.

Chapter 29 Contents	
Section	**Subject**
2901	General
See the Uniform Plumbing Code– Abu Dhabi as published by the Abu Dhabi Environmental Agency and the Water Supply Regulations, January, 2009 (WRS) as published by the Regulation and Supervision Bureau.	

Chapter 30 Elevators and Conveying Systems

Chapter 30 provides standards for the installation of elevators into buildings. Referenced standards provide the requirements for the elevator system and mechanisms. Detailed standards are provided in the chapter for hoistway enclosures, hoistway venting and machine rooms. New provisions are added in the 2009 IBC for Fire Service Access Elevators required in high-rise buildings and for the optional choice of Occupant Evacuation Elevators (see Section 403).



Chapter 30 Contents			
Section	**Subject**	**Section**	**Subject**
3001	General	**3005**	Conveying Systems
3002	Hoistway Enclosures	**3006**	Machine Rooms
3003	Emergency Operations	**3007**	Fire Service Access Elevator
3004	Hoistway Venting	**3008**	Occupant Evacuation Elevators

Chapter 31 Special Construction

Chapter 31 contains a collection of regulations for a variety of unique structures and architectural features. Pedestrian walkways and tunnels connecting two buildings are addressed in Section 3104. Membrane and air-supported structures are addressed by Section 3102. Safeguards for swimming pool safety are found in Section 3109. Standards for temporary structures, including permit requirements are provided in Section 3103. Structures as varied as awnings, marquees, signs, telecommunication and broadcast towers and automatic vehicular gates are also addressed (see Sections 3105 through 3108 and 3110).

Chapter 31 Contents			
Section	**Subject**	**Section**	**Subject**
3101	General	**3106**	Marquees
3102	Membrane Structures	**3107**	Signs
3103	Temporary Structures	**3108**	Telecommunication and Broadcast Towers
3104	Pedestrian Walkways and Tunnels	**3109**	Swimming Pool Enclosures and Safety Devices
3105	Awnings and Canopies	**3110**	Automatic Vehicular Gates

Chapter 32 Encroachments into the Public Right-of-way

Buildings and structures from time to time are designed to extend over a property line and into the public right-of-way. Local regulations outside of the building code usually set limits to such encroachments,

and such regulations take precedence over the provisions of this chapter. Standards are provided for encroachments below grade for structural support, vaults and areaways. Encroachments above grade are divided into below 8 feet, 8 feet to 15 feet, and above 15 feet, because of headroom and vehicular height issues. This includes steps, columns, awnings, canopies, marquees, signs, windows, balconies. Similar architectural features above grade are also addressed. Pedestrian walkways must also comply with Chapter 31.

Chapter 32 Contents	
Section	**Subject**
3201	General
3202	Encroachments

Chapter 33 Safeguards During Construction

Chapter 33 provides safety requirements during construction and demolition of buildings and structures. These requirements are intended to protect the public from injury and adjoining property from damage. In addition the chapter provides for the progressive installation and operation of exit stairways and standpipe systems during construction. This Chapter refers to the Codes of Practice issued by the Environment, Health and Safety Center of Abu Dhabi.

Chapter 33 Contents			
Section	**Subject**	**Section**	**Subject**
3301	General	**3307**	Protection of Adjoining Property
3302	Construction Safeguards	**3308**	Temporary Use of Streets, Alleys and Public Property
3303	Demolition	**3309**	Fire Extinguishers
3304	Site Work	**3310**	Means of Egress
3305	Sanitary	**3311**	Standpipes
3306	Protection of Pedestrians	**3312**	Automatic Sprinkler System

Chapter 34 Existing Structures

The provisions in Chapter 34 deal with alternative methods or reduced compliance requirements when dealing with existing building constraints. This chapter allows for a controlled departure from full compliance with the technical codes, without compromising the minimum standards for fire prevention and life safety features of the rehabilitated building. Provisions are divided by addition, alterations, repairs, change of occupancy and moved structures. There are further allowances for registered historic buildings. There are also special allowances for replacement of

existing stairways, replacement of glass and accessibility requirements.

Section 3412, Compliance Alternatives, allows for existing buildings to be evaluated so as to show that alterations, while not meeting new construction requirements, will improve the current existing situation. Provisions are based on a numerical scoring system involving 18 various safety parameters and the degree of code compliance for each issue.

Chapter 34 Contents			
Section	**Subject**	**Section**	**Subject**
3401	General	**3407**	Glass Replacement
3402	Definitions	**3408**	Change of Occupancy
3403	Additions	**3409**	Historic Buildings
3404	Alterations	**3410**	Moved Structures
3405	Repairs	**3411**	Accessibility for Existing Buildings
3406	Fire Escapes	**3412**	Compliance Alternatives

Chapter 35 Referenced Standards

The code contains numerous references to standards that are used to regulate materials and methods of construction. Chapter 35 contains a comprehensive list of all standards that are referenced in the code, including the appendices. The standards are part of the code to the extent of the reference to the standard (see Section 102.4). Compliance with the referenced standard is necessary for compliance with this code. By providing specifically adopted standards, the construction and installation requirements necessary for compliance with the code can be readily determined. The basis for code compliance is, therefore, established and available on an equal basis to the building code official, contractor, designer and owner.

Chapter 35 is organized in a manner that makes it easy to locate specific standards. It lists all of the referenced standards, alphabetically, by acronym of the promulgating agency of the standard. Each agency's standards are then listed in either alphabetical or numeric order based upon the standard identification. The list also contains the title of the standard; the edition (date) of the standard referenced; any addenda included as part of the ICC adoption; and the section or sections of this code that reference the standard.

Appendices

Appendices are provided in the ADIBC to offer supplemental criteria to the provisions in the main chapters of the code. Appendices have the same force and effect as the first 35 chapters of the ADIBC.

Appendix A (Reserved)

Appendix B (Reserved)

Appendix C Group U-Agricultural Buildings.

Appendix C provides a more liberal set of standards for the construction of agricultural buildings, rather than strictly following the Utility building provision, reflective of their specific usage and limited occupant load. The provisions of the appendix allow reasonable heights and areas commensurate with the risk of agricultural buildings.

Appendix E Supplemental Accessibility Requirements.

Appendix E includes scoping requirements contained in the new ADA/ABA Accessibility Guidelines that are not in Chapter 11 and not otherwise mentioned or mainstreamed throughout the code. Items in the appendix deal with subjects not typically addressed in the main chapter (e.g., beds, room signage, transportation facilities).

Appendix F Rodentproofing.

The provisions of this appendix are minimum mechanical methods to prevent the entry of rodents into a building. These standards, when used in conjunction with cleanliness and maintenance programs, can significantly reduce the potential of rodents invading a building.

Appendix G Flood-resistant Construction.

Appendix G is intended to fulfill the flood-plain management and administrative requirements of the Emirate of Abu Dhabi agencies having jurisdiction over such regulations.

Appendix H Signs.

Appendix H gathers in one place the various code standards that regulate the construction and protection of outdoor signs. Whenever possible, the appendix provides standards in performance language, thus allowing the widest possible application.

Appendix I Patio Covers.

Appendix I provides standards applicable to the construction and use of patio covers. It is limited in application to patio covers accessory to dwelling units. Covers of patios and other outdoor areas associated with restaurants, mercantile buildings, offices, nursing homes or other nondwelling occupancies would be subject to standards in the main code and not this appendix.

Appendix J Grading

Appendix J provides standards for the grading of properties. The appendix also provides standards for administration and enforcement of a grading program including permit and inspection requirements.

This project is designed and constructed in accordance with the Abu Dhabi International Building Codes

St Regis Saadiyat Hotel & Residences

Owner: Tourism Development & Investment Company (TDIC)

Contractor: Habtoor Leighton Murray Roberts JV

Status: Completed and occupied

ADIMC®

ABU DHABI INTERNATIONAL MECHANICAL CODE

www.abudhabibuildingcodes.ae

Based On the 2009 International Mechanical Code

Abu Dhabi International International Mechanical Code (ADIMC) 2013

A - General Description of ADIMC

The Abu Dhabi International Mechanical Code (ADIMC) is a code that regulates the design and installation of mechanical systems, appliances, appliance venting, duct and ventilation systems, combustion air provisions, hydronic systems and solar systems. The purpose of the code is to establish the minimum acceptable level of safety and to protect life and property from the potential dangers associated with the installation and operation of mechanical systems. The code also protects the personnel that install, maintain, service and replace the systems and appliances addressed by this code.

The ADIMC is primarily a prescriptive code with some performance text. The code relies heavily on product specifications and listings to provide much of the appliance and equipment installation requirements. The general Section 105.2 and the exception to Section 403.2 allow designs and installations to be performed by approved engineering methods as alternatives to the prescriptive methods in the code.

B - Arrangement and Format of ADIMC

The format of the ADIMC allows each chapter to be devoted to a particular subject with the exception of Chapter 3, which contains general subject matters that are not extensive enough to warrant their own independent chapter.

C - Chapter by chapter description of ADIMC

Chapter 1 Scope and Administration

Chapter 1 establishes the limits of applicability of the code and describes how the code is to be applied and enforced. A mechanical code, like any other code, is intended to be adopted as a legally enforceable document and it cannot be effective without adequate provisions for its administration and enforcement. The provisions of Chapter 1 establish the authority and duties of the code official appointed by the jurisdiction having authority and also establish the rights and privileges of the design professional, contractor and property owner.

Chapter 1 Contents			
PART 1 – SCOPE AND APPLICATION			
Section	**Subject**	**Section**	**Subject**
101	General	**102**	Applicability
PART 2 – ADMINISTRATION AND ENFORCEMENT			
103	Department of Mechanical Inspection	**107**	Inspections and Testing
104	Duties and Powers of the Code Official	**108**	Violations
105	Approval	**109**	Means of Appeal
106	Permits	**110**	Temporary Equipment, Systems and Uses

Chapter 2 Definitions

Chapter 2 is the repository of the definitions of terms used in the body of the code. Codes are technical documents and every word and term can impact the meaning of the code text and the intended results. The code often uses terms that have a unique meaning in the code and the code meaning can differ substantially from the ordinarily understood meaning of the term as used outside of the code.

The terms defined in Chapter 2 are deemed to be of prime importance in establishing the meaning and intent of the code text that uses the terms. The user of the code should be familiar with and consult this chapter because the definitions are essential to the correct interpretation of the code and because the user may not be aware that a term is defined.

Chapter 2 Contents	
Section	**Subject**
201	General
202	General Definitions

Chapter 3 General Regulations

Chapter 3 contains broadly applicable requirements related to appliance location and installation, appliance and systems access, protection of structural elements, condensate disposal and clearances to combustibles, among others.

Chapter 3 Contents			
Section	**Subject**	**Section**	**Subject**
301	General	**307**	Condensate Disposal
302	Protection of Structure	**308**	Clearance Reduction
303	Equipment and Appliance Location	**309**	Temperature Control
304	Installation	**310**	Explosion Control
305	Piping Support	**311**	Smoke and Heat Vents
306	Access and Service Space	**312**	Heating and Cooling Load Calculations

Chapter 4 Ventilation

Chapter 4 includes means for protecting building occupant health by controlling the quality of indoor air and protecting property from the effects of inadequate ventilation. In some cases, ventilation is required to prevent or reduce a health hazard by removing contaminants at their source.

Ventilation is both necessary and desirable for the control of air contaminants, moisture and temperature. Habitable and occupiable spaces are ventilated to promote a healthy and comfortable environment for the occupants. Uninhabited and unoccupied spaces are ventilated to protect the building structure from the harmful effects of excessive humidity and heat. Ventilation of specific occupancies is necessary to minimize the potential for toxic or otherwise harmful substances to reach dangerously high concentrations in air.

Chapter 4 Contents			
Section	**Subject**	**Section**	**Subject**
401	General	**404**	Enclosed Parking Garages
402	Natural Ventilation	**405**	Systems Control
403	Mechanical Ventilation	**406**	Ventilation of Uninhabited Spaces

Chapter 5 Exhaust Systems

Chapter 5 provides guidelines for reasonable protection of life, property and health from the hazards associated with exhaust systems, air contaminants and smoke development in the event of a fire. In most cases, these hazards involve materials and gases that are flammable, explosive, toxic or otherwise hazardous. Where contaminants are known to be present in quantities that are irritating or harmful to the occupants' health or are hazardous in a fire, both naturally and mechanically ventilated spaces must be equipped with mechanical exhaust systems capable of collecting and removing the contaminants.

This chapter contains requirements for the installation of exhaust systems, with an emphasis on the structural integrity of the systems and equipment involved and the overall impact of the systems on the fire safety performance of the building. It includes requirements for the exhaust of commercial kitchen grease- and smoke-laden air, hazardous fumes and toxic gases, clothes dryer moisture and heat and dust, stock and refuse materials.

Chapter 5 Contents			
Section	**Subject**	**Section**	**Subject**
501	General	**508**	Commercial Kitchen Makeup Air
502	Required Systems	**509**	Fire Suppression Systems
503	Motors and Fans	**510**	Hazardous Exhaust Systems
504	Clothes Dryer Exhaust	**511**	Dust, Stock and Refuse Conveying Systems
505	Domestic Kitchen Exhaust Equipment	**512**	Subslab Soil Exhaust Systems
506	Commercial Kitchen Hood Ventilation System Ducts and Exhaust Equipment	**513**	Smoke Control Systems
507	Commercial Kitchen Hoods	**514**	Energy Recovery Ventilation Systems

Chapter 6 Duct System

Chapter 6 of the code regulates the materials and methods used for constructing and installing ducts, plenums, system controls, exhaust systems, fire protection systems and related components that affect the overall performance of a building's air distribution system and the reasonable protection of life and property from the hazards associated with air-moving equipment and systems. This chapter contains requirements for the installation of supply, return and exhaust air systems. Specific exhaust systems are also addressed in Chapter 5. Information

on the design of duct systems is limited to that in Section 603.2. The code is very much concerned with the structural integrity of the systems and the overall impact of the systems on the fire safety and life safety performance of the building. Design considerations such as duct sizing, maximum efficiency, cost effectiveness, occupant comfort and convenience are the responsibility of the design professional. The provisions for the protection of duct penetrations of wall, floor, ceiling and roof assemblies are extracted from the Abu Dhabi International Building Code.

Chapter 6 Contents			
Section	**Subject**	**Section**	**Subject**
601	General	**605**	Air Filters
602	Plenums	**606**	Smoke Detection Systems Control
603	Duct Construction and Installation	**607**	Duct and Transfer Openings
604	Insulation		

Chapter 7 Combustion Air

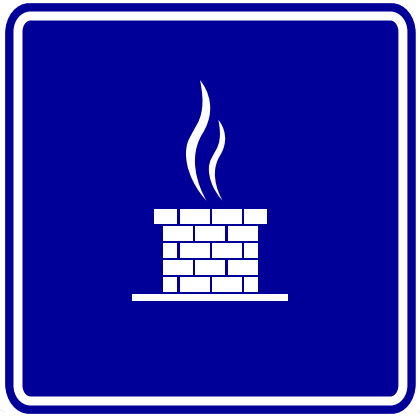
Complete combustion of solid and liquid fuel is essential for the proper operation of appliances, for control of harmful emissions and for achieving maximum fuel efficiency.

The specific combustion air requirements provided in previous editions of the code have been deleted in favor of a single section that directs the user to NFPA 31 for oil-fired appliance combustion air requirements and the manufacturer's installation instructions for solid-fuel burning appliances. For gas-fired appliances, the provisions of the Abu Dhabi International Fuel Gas Code are applicable.

Chapter 7 Contents	
Section	**Subject**
701	General

Chapter 8 Chimneys and Vents

Chapter 8 is intended to regulate the design, construction, installation, maintenance, repair and approval of chimneys, vents and their connections to solid and liquid fuel-burning appliances. The requirements of this chapter are intended to achieve the complete removal of the products of combustion from fuel-burning appliances and equipment. This chapter includes regulations for the proper selection, design, construction and installation of a chimney or vent, along with appropriate measures to



minimize the related potential fire hazards. A chimney or vent must be designed for the type of appliance or equipment it serves. Chimneys and vents are designed for specific applications depending on the flue gas temperatures and the type of fuel being burned in the appliance. Chimneys and vents for gas-fired appliances are covered in the Abu Dhabi International Fuel Gas Code.

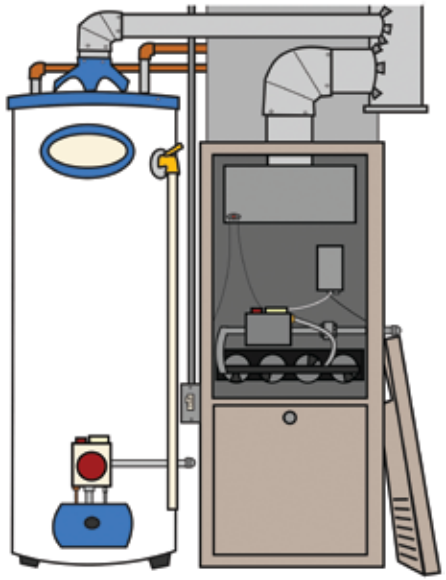
Chapter 8 Contents			
Section	**Subject**	**Section**	**Subject**
801	General	**804**	Direct-vent, Integral Vent and Mechanical Draft Systems
802	Vents	**805**	Factory-built Chimneys
803	Connectors	**806**	Metal Chimneys

Chapter 9 Specific Appliances, Fireplaces and Solid Fuel-burning Appliances

Chapter 9 sets minimum construction and performance criteria for fireplaces, appliances and equipment and provides for the safe installation of these items. It reflects the code's intent to specifically address all of the types of appliances that the code intends to regulate. Other regulations affecting the installation of solid fuel-burning fireplaces, appliances and accessory appliances are found in Chapters 3, 6, 7, 8, 10, 11, 12, 13 and 14.

Chapter 9 Contents			
Section	**Subject**	**Section**	**Subject**
901	General	**915**	Engine and Gas Turbine-powered Equipment and Appliances
902	Masonry Fireplaces	**916**	Pool and Spa Heaters
903	Factory-built Fireplaces	**917**	Cooking Appliances
904	Pellet Fuel-burning Appliances	**918**	Forced-air, Warm-air Furnaces
905	Fireplace Stoves and Room Heaters	**919**	Conversion Burners
906	Factory-built Barbecue Appliances	**920**	Unit Heaters
907	Incinerators and Crematories	**921**	Vented Room Heaters
908	Cooling Towers, Evaporative Condensers and Fluid Coolers	**922**	Kerosene and Oil-fired Stoves
909	Vented Wall Furnaces	**923**	Small Ceramic Kilns
910	Floor Furnaces	**924**	Stationary Fuel Cell Power Systems
911	Duct Furnaces	**925**	Masonry Heaters
912	Infrared Radiant Heaters	**926**	Gaseous Hydrogen Systems
913	Clothes Dryers	**927**	Heat Recovery Ventilators
914	Sauna Heaters		

Chapter 10 Boilers, Water Heaters and Pressure Vessels



Chapter 10 presents regulations for the proper installation of boilers, water heaters and pressure vessels to protect life and property from the hazards associated with those appliances and vessels. It applies to all types of boilers and pressure vessels, regardless of size, heat input, operating pressure or operating temperature.

Because pressure vessels are closed containers designed to contain liquids, gases or both under pressure, they must be designed and installed to prevent structural failures that can result in extremely hazardous situations. Certain safety features are therefore provided in Chapter 10 to reduce the potential for explosion hazards.

Chapter 10 Contents			
Section	**Subject**	**Section**	**Subject**
1001	General	**1007**	Boiler Low-water Cutoff
1002	Water Heaters	**1008**	Steam Blowoff Valve
1003	Pressure Vessels	**1009**	Hot Water Boiler Expansion Tank
1004	Boilers	**1010**	Gauges
1005	Boiler Connections	**1011**	Tests
1006	Safety and Pressure Relief Valves and Controls		

Chapter 11 Refrigeration

Chapter 11 contains regulations pertaining to the life safety of building occupants. These regulations establish minimum requirements to achieve the proper design, construction, installation and operation of refrigeration systems. Refrigeration systems are a combination of interconnected components and piping assembled to form a closed circuit in which a refrigerant is circulated. The system's function is to extract heat from a location or medium,

and to reject that heat to a different location or medium. This chapter establishes reasonable safeguards for the occupants by defining and mandating practices that are consistent with the practices and experience of the industry.

Chapter 11 Contents			
Section	**Subject**	**Section**	**Subject**
1101	General	**1106**	Machinery Room, Special Requirements
1102	System Requirements	**1107**	Refrigerant Piping
1103	Refrigeration System Classification	**1108**	Field Test
1104	System Application Requirements	**1109**	Periodic Testing
1105	Machinery Room, General Requirements		

Chapter 12 Hydronic Piping

Hydronic piping includes piping, fittings and valves used in building space conditioning systems. Applications include hot water, chilled water, steam, steam condensate, brines and water/antifreeze mixtures. Chapter 12 contains the provisions that govern the construction, installation, alteration and repair of all hydronic piping systems that affect reliability, serviceability, energy efficiency and safety.

Chapter 12 Contents			
Section	**Subject**	**Section**	**Subject**
1201	General	**1206**	Piping Installation
1202	Material	**1207**	Transfer Fluid
1203	Joints and Connections	**1208**	Tests
1204	Pipe Insulation	**1209**	Embedded Piping
1205	Valves		

Chapter 13 Fuel Oil Piping and Storage

Chapter 13 regulates the design and installation of fuel oil storage and piping systems. The regulations include reference to construction standards for above-ground and underground storage tanks, material standards for piping systems (both above-ground and underground) and extensive requirements for the proper assembly of system piping and components. The International Fire Code® (IFC®) covers subjects not addressed in detail here. The provisions in this chapter are intended to prevent fires, leaks and spills involving fuel oil storage and piping systems.

Chapter 13 Contents			
Section	**Subject**	**Section**	**Subject**
1301	General	**1305**	Fuel Oil System Installation
1302	Material	**1306**	Oil Gauging
1303	Joints and Connections	**1307**	Fuel Oil Valves
1304	Piping Support	**1308**	Testing

Chapter 14 Solar Systems

Chapter 14 establishes provisions for the safe installation, operation and repair of solar energy systems used for space heating or cooling, domestic hot water heating or processing. Although such systems use components similar to those of conventional mechanical equipment, many of these provisions are unique to solar energy systems.

Chapter 14 Contents			
Section	**Subject**	**Section**	**Subject**
1401	General	**1403**	Heat Transfer Fluids
1402	Installation	**1404**	Materials

Chapter 15 Referenced Standards

Chapter 15 lists all of the product and installation standards and codes that are referenced throughout Chapters 1 through 14. As stated in Section 102.8, these standards and codes become an enforceable part of the code (to the prescribed extent of the reference) as if printed in the body of the code. Chapter 15 provides the full title and edition year of the standards and codes in addition to the address of the promulgators and the section numbers in which the standards and codes are referenced.

Appendix A Combustion Air Openings and Chimney Connector Pass-throughs

Appendix A provides figures that illustrate various requirements in the body of the code. Figures A-1 through A-4 illustrate typical combustion air requirements. Figure A-5 illustrates the chimney connector clearance requirements of Table 803.10.4.

This project is designed and constructed in accordance with the Abu Dhabi International Building Codes

Al Mafraq Hospital

Owner: SEHA

Consultant: Santec

Contractor: Habtoor Leighton Murray Roberts JV

Status: Under Construction

Cost: US$952,822,000

Size: 246,118 SM

ADIECC®

ABU DHABI INTERNATIONAL ENERGY CONSERVATION CODE

www.abudhabibuildingcodes.ae

Based On the 2009 International Energy Conservation Code

SEHA صحة هيئة أبوظبي للخدمات الصحية

Allen & Shariff

Stantec BURT, HILL

iTech BIM Management Services

Abu Dhabi International Energy Conversation Code (ADIECC) 2013

A - General Description of ADIECC

The Abu Dhabi International Energy Conservation Code (ADIECC) is a code that regulates minimum energy conservation requirements for new buildings. The ADIECC addresses energy conservation requirements for all aspects of energy uses in both commercial and residential construction, including heating and ventilating, lighting, water heating, and power usage for appliances and building systems.

The ADIECC is a design document. For example, before one constructs a building, the designer must determine the minimum insulation R -values and fenestration U -factors for the building exterior envelope. Depending on whether the building is for residential use or for commercial use, the ADIECC sets forth minimum requirements for exterior envelope insulation, window and door U -factors and SHGC ratings, duct insulation, lighting and power efficiency, and water distribution insulation.

B - Arrangement and Format of ADIECC

Before applying the requirements of the ADIECC it is beneficial to understand its arrangement and format. The ADIECC, like other codes published by ICC, is arranged and organized to follow sequential steps that generally occur during a plan review or inspection. The ADIECC is divided into five different parts:

Chapters	Subject	Chapters	Subject
1-2	Administration and definitions	5	Energy efficiency for commercial buildings
3	Climate zones and general materials requirements	6	Referenced standards
4	Energy efficiency for residential buildings		

C - Chapter by chapter description of ADIECC

The following is a chapter-by-chapter summary of the scope and intent of the provisions of the Abu Dhabi International Energy Conservation Code:

Chapter 1 Administration

This chapter contains provisions for the application, enforcement and administration of subsequent requirements of the code. In addition to establishing the scope of the code, Chapter 1 identifies which buildings and structures come under its purview. Chapter 1 is largely concerned with maintaining “due process of law” in enforcing the energy conservation criteria contained in the body of the code. Only through careful observation of the administrative provisions can the building

official reasonably expect to demonstrate that "equal protection under the law" has been provided.

Chapter 1 Contents			
PART 1 – SCOPE AND APPLICATION			
Section	**Subject**	**Section**	**Subject**
101	Scope and General Requirements	**102**	Alternate Materials- Method of Construction, Design or Insulating Systems
PART 2 – ADMINISTRATION AND ENFORCEMENT			
103	Construction Documents	**107**	Fees
104	Inspections.	**108**	Stop Work Order
105	Validity	**109**	Board of Appeal
106	Reference Standards		

Chapter 2 Definitions

All terms that are defined in the code are listed alphabetically in Chapter 2. While a defined term may be used in one chapter or another, the meaning provided in Chapter 2 is applicable throughout the code.

Additional definitions regarding climate zones are found in Tables 301.3(1) and (2). These are not listed in Chapter 2.

Where understanding of a term's definition is especially key to or necessary for understanding of a particular code provision, the term is show in italics wherever it appears in the code. This is true only for those terms that have a meaning that is unique to the code. In other words, the generally understood meaning of a term or phrase might not be sufficient or consistent with the meaning prescribed by the code; therefore, it is essential that the code-defined meaning be known.

Guidance regarding tense, gender and plurality of defined terms as well as guidance regarding terms not defined in this code is provided.

Chapter 2 Contents	
Section	**Subject**
201	General
202	General Definitions

Chapter 3 General Requirements

Chapter 3 specifies the climate zones that will serve to establish the exterior design conditions. In addition, Chapter 3 provides interior design conditions that are used as a basis for assumptions in heating and cooling load calculations, and provides basic material requirements for insulation materials and fenestration materials.

Climate has a major impact on the energy use of most buildings. The code establishes many requirements such as wall and roof insulation R -values, window and door thermal transmittance requirement (U -factors) as well as provisions that affect the mechanical systems based upon the climate where the building is located. This chapter will contain the information that will be used to properly assign the building location into the correct climate zone and will then be used as the basis for establishing requirements or elimination of requirements.

Chapter 3 Contents	
Section	**Subject**
301	Climate Zones
302	Design Conditions
303	Materials, Systems and Equipment

Chapter 4 Residential Energy Efficiency

Chapter 4 contains the energy-efficiency-related requirements for the design and construction of residential buildings regulated under this code. It should be noted that the definition of a residential building in this code is unique for this code. In this code, a residential building is an R-2, R-3 or R-4 building three stories or less in height. All other buildings, including residential buildings greater than three stories in height, are regulated by the energy conservation requirements of Chapter 5. The applicable portions of a residential building must comply with the provisions within this chapter for energy efficiency. This chapter defines requirements for the portions of the building and building systems that impact energy use in new residential construction and promotes the effective use of energy.

The provisions within the chapter promote energy efficiency in the building envelope, the heating and cooling system and the service water heating system of the building.

Chapter 4 Contents			
Section	**Subject**	**Section**	**Subject**
401	General	**404**	Electrical Power and Lighting Systems
402	Building Thermal Envelope	**405**	Simulated Performance Alternative
403	Systems		

Chapter 5 Commercial Energy Efficiency

Chapter 5 contains the energy-efficiency-related requirements for the design and construction of most types of commercial buildings and residential buildings greater than three stories in height above grade. Residential buildings, townhouses and garden apartments three stories or less in height are covered in Chapter 4. Like Chapter 4, this chapter defines requirements for the portions of the building and building systems that impact energy use in new commercial construction and new residential construction greater than three stories in height, and promotes the effective use of energy. The provisions within the chapter promote energy efficiency in the building envelope, the heating and cooling system and the service water heating system of the building.

Chapter 5 Contents

Section	Subject	Section	Subject
501	General	**504**	Service Water Heating
502	Building Envelope Requirements	**505**	Electrical Power and Lighting Systems
503	Building Mechanical Systems	**506**	Total Building Performance

Chapter 6 Referenced Standards

The code contains numerous references to standards that are used to regulate materials and methods of construction. Chapter 6 contains a comprehensive list of all standards that are referenced in the code. The standards are part of the code to the extent of the reference to the standard. Compliance with the referenced standard is necessary for compliance with this code. By providing specifically adopted standards, the construction and installation requirements necessary for compliance with the code can be readily determined. The basis for code compliance is, therefore, established and available on an equal basis to the code official, contractor, designer and owner.

Chapter 6 is organized in a manner that makes it easy to locate specific standards. It lists all of the referenced standards, alphabetically, by acronym of the promulgating agency of the standard.

Each agency's standards are then listed in either alphabetical or numeric order based upon the standard identification. The list also contains the title of the standard; the edition (date) of the standard referenced; any addenda included as part of the ICC adoption; and the section or sections of this code that reference the standard.

This project is designed and constructed in accordance with the Abu Dhabi International Building Codes

Al Silaa Hospital

Owner: SEHA – Abu Dhabi Health Services Company

Consultant: Santec

Contractor: Habtoor Leighton Murray Roberts JV

Statu: Under Construction

Cost: US$62,051,000

Size: 28,174 SM

ADIFGC®

ABU DHABI INTERNATIONAL FUEL GAS CODE

www.abudhabibuildingcodes.ae

Based On the 2009 International Fuel Gas Code

SEHA صحة

Allen & Shariff

Stantec BURT, HILL

BIM Management Services

Abu Dhabi International Fuel Gas Code (ADIFGC) 2013

A - General Description of ADIFGC

The ADIFGC is a code that regulates the design and installation of fuel gas distribution piping and systems, appliances, appliance venting systems, combustion air provisions, gaseous hydrogen systems and motor vehicle gaseous-fuel-dispensing stations. The definition of fuel gas includes natural, liquefied petroleum and manufactured gases and mixtures of these gases.

The purpose of the code is to establish the minimum acceptable level of safety and to protect life and property from the potential dangers associated with the storage, distribution and usage of fuel gases and the byproducts of combustion of such fuels. The code also protects the personnel that install, maintain, service and replace the systems and appliances addressed by this code.

With the exception of Section 401.1.1, the ADIFGC does not address utility-owned piping and equipment (i.e., anything upstream of the point of delivery). See the definition of "Point of delivery" and Section 501.8 for other code coverage exemptions.

The ADIFGC is primarily a specification-oriented (prescriptive) code with some performance-oriented text. For example, Section 503.3.1 is a performance statement, but Chapter 5 contains prescriptive requirements that will cause Section 503.3.1 to be satisfied.

The ADIFGC applies to all occupancies including one- and two-family dwellings and townhouses. The ADIFGC does not apply to piping systems that operate at pressures in excess of 125 psig for natural gas and 20 psig for LP-gas (note exception in Section 402.6).

The general Section 105.2 and the specific Sections 304.8, 402.3, 503.5.5 and 503.6.9 allow combustion air provisions, pipe sizing and chimney and vent sizing to be performed by approved engineering methods as alternatives to the prescriptive methods in the code.

B - Arrangement and Format of ADIFGC

The format of the ADIFGC allows each chapter to be devoted to a particular subject, with the exception of Chapter 3, which contains general subject matters that are not extensive enough to warrant their own independent chapter.

C - Chapter by chapter description of ADIFGC

Chapter 1 Scope and Administration

Chapter 1 establishes the limits of applicability of the code and describes how the code is to be applied and enforced. A fuel gas code, like any other code, is intended to be adopted as a legally enforceable document, and it cannot be effective without adequate provisions for its administration and enforcement. The provisions of Chapter 1 establish the authority and duties of the code official appointed by the jurisdiction having authority and also establish the rights and privileges of the design professional, contractor and property owner.

Chapter 1 Contents			
PART 1 – SCOPE AND APPLICATION			
Section	**Subject**	**Section**	**Subject**
101	General	**102**	Applicability
PART 2 – ADMINISTRATION AND ENFORCEMENT			
103	Department of Inspection	**107**	Inspections and Testing
104	Duties and Powers of the Code Official	**108**	Violations
105	Approval	**109**	Means of Appeal
106	Permits	**110**	Temporary Equipment, Systems and Uses

Chapter 2 Definitions

Chapter 2 is the repository of the definitions of terms used in the body of the code. Codes are technical documents and every word, term and punctuation mark can impact the meaning of the code text and the intended results. The code often uses terms that have a unique meaning in the code and the code meaning can differ substantially from the ordinarily understood meaning of the term as used outside of the code.

The terms defined in Chapter 2 are deemed to be of prime importance in establishing the meaning and intent of the code text that uses the terms. The user of the code should be familiar with and consult this chapter because the definitions are essential to the correct interpretation of the code and because the user may not be aware that a term is defined.

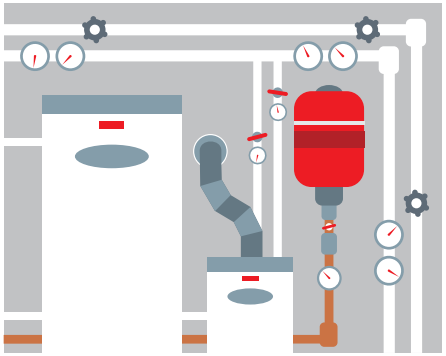
Chapter 2 Contents			
Section	**Subject**	**Section**	**Subject**
201	General	**202**	General Definitions

Chapter 3 General Regulations

Chapter 3 contains broadly applicable requirements related to appliance location and installation, appliance and systems access, protection of structural elements and clearances to combustibles, among others. This chapter also covers combustion air provisions for gas-fired appliances.

Chapter 3 Contents			
Section	**Subject**	**Section**	**Subject**
301	General	**306**	Access and Service Space
302	Structural Safety	**307**	Condensate Disposal
303	Appliance Location	**308**	Clearance Reduction
304	Combustion, Ventilation and Dilution Air	**309**	Electrical
305	Installation	**310**	Electrical Bonding

Chapter 4 Gas Piping Installations



Chapter 4 covers the allowable materials for gas piping systems and the sizing and installation of such systems. It also covers pressure regulators, appliance connections and overpressure protection devices. Gas piping systems are sized to supply the maximum demand while maintaining the supply pressure necessary for safe operation of the appliances served.

Chapter 4 Contents			
Section	**Subject**	**Section**	**Subject**
401	General	**409**	Shutoff Valves
402	Pipe Sizing	**410**	Flow Controls
403	Piping Materials	**411**	Appliance and Manufactured Home Connections
404	Piping System Installation	**412**	Liquefied Petroleum Gas Motor Vehicle Fuel-dispensing Facilities
405	Piping Bends and Changes in Direction	**413**	Compressed Natural Gas Motor Vehicle Fuel-dispensing Facilities
406	Inspection, Testing and Purging	**414**	Supplemental and Standby Gas Supply
407	Piping Support	**415**	Piping Support Intervals
408	Drips and Sloped Piping	**416**	Overpressure Protection Devices

Chapter 5 Chimneys and Vents

Chapter 5 regulates the design, construction, installation, maintenance, repair and approval of chimneys, vents, venting systems and their connections to gas-fired appliances. Properly designed chimneys, vents and venting systems are necessary to conduct to the outdoors the flue gases produced by the combustion of fuels in appliances. The provisions of this chapter are intended to minimize the hazards associated with high temperatures and potentially toxic and corrosive combustion gases. This chapter addresses all of the factory-built and site-built chimneys, vents and venting systems used to vent all types and categories of appliances. It also addresses direct-vent appliances, integral vent appliances, side-wall mechanically vented appliances and exhaust hoods that convey the combustion byproducts from cooking and other process appliances.

Chapter 5 Contents			
Section	**Subject**	**Section**	**Subject**
501	General	**504**	Direct-vent, Integral Vent, Mechanical Vent and Ventilation/ Exhaust Hood Venting
502	Vents	**505**	Direct-vent, Integral Vent, Mechanical Vent and Ventilation/ Exhaust Hood Venting
503	Venting of Appliances	**506**	Factory-built Chimneys

Chapter 6 Specific Appliances

Chapter 6 addresses specific appliances that the code intends to regulate. Each main section applies to a unique type of gas-fired appliance and specifies the product standards to which the appliance must be listed. The general requirements found in the previous Chapters 1 through 5 also apply and the sections in Chapter 6 add the special requirements that are specific to each type of appliance.

Chapter 6 Contents			
Section	**Subject**	**Section**	**Subject**
601	General	**619**	Conversion Burners
602	Decorative Appliances for Installation in Fireplaces	**620**	Unit Heaters
603	Log Lighters	**621**	Unvented Room Heaters
604	Vented Gas Fireplaces (Decorative Appliances)	**622**	Vented Room Heaters
605	Vented Gas Fireplace Heaters	**623**	Cooking Appliances
606	Incinerators and Crematories	**624**	Water Heaters
607	Commercial-industrial Incinerators	**625**	Refrigerators
608	Vented Wall Furnaces	**626**	Gas-fired Toilets
609	Floor Furnaces	**627**	Air-conditioning Appliances
610	Duct Furnaces	**628**	Illuminating Appliances
611	Nonrecirculating Direct-fired Industrial Air Heaters	**629**	Small Ceramic Kilns
612	Recirculating Direct-fired Industrial Air Heaters	**630**	Infrared Radiant Heaters
613	Clothes Dryers	**631**	Boilers
614	Clothes Dryer Exhaust	**632**	Equipment Installed in Existing Unlisted Boilers
615	Sauna Heaters	**633**	Stationary Fuel-cell Power Systems
616	Engine and Gas Turbine-powered Equipment	**634**	Chimney Damper Opening Area
617	Pool and Spa Heaters	**635**	Gaseous Hydrogen Systems
618	Forced-air Warm-air Furnaces		

Chapter 7 Gaseous Hydrogen Systems

Chapter 7 is specific to gaseous hydrogen generation, storage, distribution and utilization systems, appliances and equipment. Note that hydrogen is not within the definition of "Fuel gas," but it is, nonetheless, commonly used as a fuel for fuel-cell power generation and fuel-cell powered motor vehicles. The scope of Chapter 7 is not limited to any particular use of hydrogen (see Sections 633 and 635). Hydrogen systems have unique potential hazards because of the specific gravity of the gas, its chemical effect on materials and the fact that it is not odorized.

Chapter 7 Contents			
Section	**Subject**	**Section**	**Subject**
701	General	**705**	Testing of Hydrogen Piping Systems
702	General Definitions	**706**	Location of Gaseous Hydrogen Systems
703	General Requirements	**707**	Operation and Maintenance of Gaseous Hydrogen Systems
704	Piping, Use and Handling	**708**	Design of Liquefied Hydrogen Systems Associated with Hydrogen Vaporization Operations

Chapter 8 Referenced Standards

Chapter 8 lists all of the product and installation standards and codes that are referenced throughout Chapters 1 through 7. As stated in Section 102.8, these standards and codes become an enforceable part of the code (to the prescribed extent of the reference) as if printed in the body of the code. Chapter 8 provides the full title and edition year of the standards and codes in addition to the address of the promulgators and the section numbers in which the standards and codes are referenced.

Appendix A Sizing and Capacities of Gas Piping

This appendix is informative and not part of the code. It provides design guidance, useful facts and data and multiple examples of how to apply the sizing tables and sizing methodologies of Chapter 4.

Appendix B Sizing of Venting Systems Serving Appliances Equipped with Draft Hoods, Category I Appliances and Appliances Listed for Use with Type B Vents

This appendix is informative and not part of the code. It contains multiple examples of how to apply the vent and chimney tables and methodologies of Chapter 5.

Appendix C Exit Terminals of Mechanical Draft and Direct-vent Venting Systems

This appendix is informative and not part of the code. It consists of a figure and notes that visually depict code requirements from Chapter 5 for vent terminals with respect to the openings found in building exterior walls.

Appendix D Recommended Procedure for Safety Inspection of an Existing Appliance Installation

This appendix is informative and not part of the code. It provides recommended procedures for testing and inspecting an appliance installation to determine if the installation is operating safely and if the appliance is in a safe condition.

43 Schools have been designed and constructed in accordance with the Abu Dhabi International Building Codes

Abu Dhabi Educational Council (ADEC) Schools

Owner:	Abu Dhabi Educational Council
Consultant:	KEO International
	Dewan Architects
	Broadway Maylan
	Studio E (UK)
	Lumiset, (Finland)
Status:	23 schools have been completed (2011 & 2012)
	10 schools under construction (2012/13)
	10 schools in tender (2013)

ADIPMC

ABU DHABI INTERNATIONAL PROPERTY MAINTENANCE CODE

www.abudhabibuildingcodes.ae

Based On the 2009 International Property Maintenance Code

Abu Dhabi International Property Maintenance Code (ADIPMC) 2013

A - General Description of ADIPMC

The Abu Dhabi International Property Maintenance Code (ADIPMC) is a code that regulates the minimum maintenance requirements for existing buildings.

The ADIPMC is a maintenance document intended to establish minimum maintenance standards for basic equipment, light, ventilation, heating, sanitation and fire safety. Responsibility is fixed among owners, operators and occupants for code compliance. The ADIPMC provides for the regulation and safe use of existing structures in the interest of the social and economic welfare of the community.

B - Arrangement and Format of ADIPMC

Chapter	Subjects	Chapter	Subjects
1	Administration	5	Plumbing Facilities and Fixture Requirements
2	Definitions	6	Mechanical and Electrical Requirements
3	General Requirements	7	Fire Safety Requirements
4	Light, Ventilation and Occupancy Limitations	8	Referenced Standards

C - Chapter by chapter description of ADIPMC

The following is a chapter-by-chapter summary of the scope and intent of the provisions of the Abu Dhabi International Property Maintenance Code:

Chapter 1 Administration and Enforcement

This chapter contains provisions for the application, enforcement and administration of subsequent requirements of the code. In addition to establishing the scope of the code, Chapter 1 identifies

which buildings and structures come under its purview. Chapter 1 is largely concerned with maintaining "due process of law" in enforcing the property maintenance criteria contained in the body of the code. Only through careful observation of the administrative provisions can the building official reasonably expect to demonstrate that "equal protection under the law" has been provided.

Chapter 1 Contents			
PART 1—SCOPE AND APPLICATION			
Section	**Subject**	**Section**	**Subject**
101	General	**102**	Applicability
PART 2—ADMINISTRATION AND ENFORCEMENT			
103	Department of Property Maintenance Inspection	**108**	Unsafe Structures and
104	Duties and Powers of the Code Official	**109**	Emergency Measures
105	Approval	**110**	Demolition
106	Violations	**111**	Means of Appeal
107	Notices and Orders	**112**	Stop Work Order

Chapter 2 Definitions

All terms that are defined in the code are listed alphabetically in Chapter 2. While a defined term may be used in one chapter or another, the meaning provided in Chapter 2 is applicable throughout the code.

Chapter 2 Contents	
Section	**Subject**
201	General
202	General Definitions

Where understanding of a term's definition is especially key to or necessary for understanding of a particular code provision, the term is show in italics wherever it appears in the code. This is true only for those terms that have a meaning that is unique to the code. In other words, the generally understood meaning of a term or phrase might not be sufficient or consistent with the meaning prescribed by the code; therefore, it is essential that the code-defined meaning be known.

Guidance regarding tense, gender and plurality of defined terms as well as guidance regarding terms not defined in this code is provided.

Chapter 3 General Requirements

Chapter 3, "General Requirements," is broad in scope. It includes a variety of requirements for the exterior property areas as well as the interior and exterior elements of the structure. This chapter provides requirements that are intended to maintain a minimum level of safety and sanitation for both the general public and the occupants of a structure, and to maintain a building's structural and weather-resistance performance. Chapter 3 provides specific criteria for regulating the installation and maintenance of specific

building components; maintenance requirements for vacant structures and land; requirements regulating the safety, sanitation and appearance of the interior and exterior of structures and all exterior property areas; accessory structures; vehicle storage regulations and establishes who is responsible for complying with the chapter's provisions. This chapter also contains the requirements for swimming pools, spas and hot tubs and the requirements for protective barriers and gates in these barriers. Chapter 3 establishes the responsible parties for exterminating insects and rodents, and maintaining sanitary conditions in all types of occupancies.

Chapter 3 Contents			
Section	**Subject**	**Section**	**Subject**
301	General	**306**	Component Serviceability
302	Exterior Property Areas	**307**	Handrails and Guardrails
303	Swimming Pools, Spas and Hot Tubs	**308**	Rubbish and Garbage
304	Exterior Structure	**309**	Pest Elimination
305	Interior Structure		

Chapter 4 Light, Ventilation and Occupancy Limitations

The purpose of Chapter 4 is to set forth these requirements in the code and to establish the minimum environment for occupiable and habitable buildings, by establishing the minimum criteria for light and ventilation and identifies occupancy limitations including minimum room width and area, minimum ceiling height and restrictions to prevent overcrowding. This chapter also provides for alternative arrangements of windows and other devices to comply with the requirements for light and ventilation and prohibits certain room arrangements and occupancy uses.

Chapter 4 Contents			
Section	**Subject**	**Section**	**Subject**
401	General	**403**	Ventilation
402	Light	**404**	Occupancy Limitations

Chapter 5 Plumbing Facilities and Fixture Requirements

Chapter 5 establishes the minimum criteria for the installation, maintenance and location of plumbing systems and facilities, including the water supply system, water heating appliances, sewage disposal system and related plumbing fixtures.

Sanitary and clean conditions in occupied buildings are dependent upon certain basic plumbing principles, including providing potable water to a building, providing the basic fixtures to effectively utilize that water and properly removing waste from the building. Chapter 5 establishes the minimum criteria to verify that these principles are maintained throughout the life of a building.

Chapter 5 Contents			
Section	**Subject**	**Section**	**Subject**
501	General	**505**	Water System
502	Required Facilities	**506**	Sanitary Drainage System
503	Toilet Rooms	**507**	Storm Drainage
504	Plumbing Systems and Fixtures		

Chapter 6 Mechanical and Electrical Requirements

The purpose of Chapter 6 is to establish minimum performance requirements for heating, electrical and mechanical facilities and to establish minimum standards for the safety of these facilities.

This chapter establishes minimum criteria for the installation and maintenance of the following: heating and air-conditioning equipment, appliances and their supporting systems; water-heating equipment, appliances and systems; cooking equipment and appliances; ventilation and exhaust equipment; gas and liquid fuel distribution piping and components; fireplaces and solid fuel-burning appliances; chimneys and vents; electrical services; lighting fixtures; electrical receptacle outlets; electrical distribution system equipment, devices and wiring; and elevators, escalators and dumbwaiters.

Chapter 6 Contents			
Section	**Subject**	**Section**	**Subject**
601	General	**605**	Electrical Equipment
602	Heating Facilities	**606**	Elevators, Escalators and Dumbwaiters
603	Mechanical Equipment	**607**	Duct Systems
604	Electrical Facilities		

Chapter 7 Fire Safety Requirements

The purpose of Chapter 7 is to address those fire hazards that arise as the result of a building's occupancy. It also provides minimum requirements for fire safety issues that are most likely to arise in older buildings.

This chapter contains requirements for means of egress in existing buildings, including path of travel, required egress width, means of egress doors and emergency escape openings.

Chapter 7 establishes the minimum requirements for fire safety facilities and fire protection systems, as these are essential fire safety systems.

Chapter 7 Contents			
Section	**Subject**	**Section**	**Subject**
701	General	**703**	Fire-resistance Ratings
702	Means of Egress	**704**	Fire Protection Systems

Chapter 8 Referenced Standards

The code contains numerous references to standards that are used to regulate materials and methods of construction. Chapter 8 contains a comprehensive list of all standards that are referenced in the code. The standards are part of the code to the extent of the reference to the standard. Compliance with the referenced standard is necessary for compliance with this code. By providing specifically adopted standards, the construction and installation requirements necessary for compliance with the code can be readily determined. The basis for code compliance is, therefore, established and available on an equal basis to the code official, contractor, designer and owner.

Chapter 8 is organized in a manner that makes it easy to locate specific standards. It lists all of the referenced standards, alphabetically, by acronym of the promulgating agency of the standard. Each agency's standards are then listed in either alphabetical or numeric order based upon the standard identification. The list

also contains the title of the standard; the edition (date) of the standard referenced; any addenda included as part of the ICC adoption; and the section or sections of this code that reference the standard.

This project is designed and constructed in accordance with the Abu Dhabi International Building Codes

Louvre Abu Dhabi

Owner:	Tourism Development & Investment Company (TDIC)
Consultants:	Jean Nouvel
	Buro Happold
	Pascall & Watson
	Mero-TSK
Contractor:	ArabTech
Status:	Under Construction

ADIPSDC

ABU DHABI INTERNATIONAL PRIVATE SEWAGE DISPOSAL CODE

www.abudhabibuildingcodes.ae

Based On the 2009 International Private Sewage Disposal Code

Abu Dhabi International Private Sewage Disposal Code (ADIPSDC) 2013

A - General Description of ADIPSDC

The Abu Dhabi International Private Sewage Disposal Code (ADIPSDC) is a code that regulates minimum requirements for the installation of new or the alteration of existing private sewage disposal systems. Where a building cannot be served by a public sewer system, the building site must be provided with a system for treating the waste water generated from the use of plumbing fixtures in the building. The ADIPSDC addresses site evaluations, materials, various soil absorption systems, holding tanks, cesspools and onsite waste water treatment systems. The ADIPSDC provides a total approach for the onsite, safe disposal of the waste flow discharged to the plumbing fixtures in a building.

TheADIPSDCisaspecification-(prescriptive-)oriented code with very few occurrences of performance-oriented text. The site soil must be evaluated in a prescribed manner to determine its ability to accept the waste flow. The chosen waste treatment method must be designed in a prescribed manner for the soil conditions at the building site, constructed using prescribed materials and installed according to prescribed dimensions. The ADIPSDC sets forth the minimum acceptable requirements for private sewage disposal systems in order to protect humans and the environment from insanitary conditions that would develop if waste flows were not rendered harmless.

B - Arrangement and Format of ADIPSDC

Chapters	Subjects	Chapters	Subjects
1-2	Administration and Definitions	**11**	Waste water Treatment Systems
3	General Regulations	**12**	Inspections
4	Site Evaluation and Requirements	**13**	Nonliquid Saturated Treatment Systems
5	Materials	**14**	Referenced Standards
6, 7, 9 & 10	Effluent Absorption and Distribution Systems	**Appendices A & B**	Appendices
8	Tanks		

C - Chapter by chapter description of ADIPSDC

Chapter 1 Scope and Administration

This chapter contains provisions for the application, enforcement and administration of subsequent requirements of the code. In addition to establishing the scope of the code, Chapter 1 identifies which buildings and structures come under its purview. Chapter 1 is largely concerned

with maintaining "due process of law" in enforcing the requirements contained in the body of this code. Only through careful observation of the administrative provisions can the building official reasonably expect to demonstrate that "equal protection under the law" has been provided.

Chapter 1 Contents			
PART 1 – SCOPE AND APPLICATION			
Section	**Subject**	**Section**	**Subject**
101	General	**102**	Applicability
PART 2 – ADMINISTRATION AND ENFORCEMENT			
103	Department of Private Sewage Disposal Inspection	**107**	Inspections
104	Duties and Powers of the Code Official	**108**	Violations
105	Approval	**109**	Means of Appeal
106	Permits	**110**	Temporary Equipment, Systems and Uses

Chapter 2 Definitions

Chapter 2 is the repository of the definitions of terms used in the body of the code. Codes are technical documents and every word, term and punctuation mark can impact the meaning of the code text and the intended results. The code often uses terms that have a unique meaning in the code and the code meaning can differ substantially from the ordinarily understood meaning of the term as used outside of the code.

The terms defined in Chapter 2 are deemed to be of prime importance in establishing the meaning and intent of the code text. The user of the code should be familiar with and consult this chapter because the definitions are essential to the correct interpretation of the code and the user may not be aware that a term is defined.

Where understanding of a term's definition is especially key to or necessary for understanding of a particular code provision, the term is shown in italics wherever it appears in the code. This is true only for those terms that have a meaning that is unique to the code. In other words, the generally understood meaning of a term or phrase might not be sufficient or consistent with the meaning prescribed by the code; therefore, it is essential that the code-defined meaning be known.

Guidance regarding tense, gender and plurality of defined terms, as well as guidance regarding terms not defined in this code, is provided.

Chapter 2 Contents	
Section	**Subject**
201	General
202	General Definitions

Chapter 3 General Regulations

The content of Chapter 3 is often referred to as "miscellaneous," rather than general regulations. Chapter 3 received that label because it is the only chapter in the code whose requirements do not interrelate. If a requirement cannot be located in another chapter, it can be found in this chapter. Specific requirements concerning flood hazard areas are in this chapter.

Chapter 3 Contents			
Section	**Subject**	**Section**	**Subject**
301	General	**303**	Flood Hazard Areas
302	Specific Limitations		

Chapter 4 Site Evaluation and Requirements

A private sewage disposal system has an effluent which cannot be directly discharged into waterways or open ponds. Soil of the right consistency and water content provides a natural filtering and treatment of this discharge. Because soil conditions vary widely, even on the same building site, tests and inspections of the soils must be performed to evaluate the degree to which the soil can accept these liquids. The results of the tests provide necessary information to design an adequate private sewage disposal system. Chapter 4 provides the methods for evaluating the building site.

Chapter 4 Contents			
Section	**Subject**	**Section**	**Subject**
401	General	**404**	Percolation or Permeability Requirements
402	Slope	**405**	Soil Verification
403	Soli Borings and Evaluation	**406**	Site Requirements

Chapter 5 Materials

Private sewage disposal systems depend on the strength, quality and chemical resistance of the components that make up the system. To that end, the purpose of Chapter 5 is to specify the minimum material and component standards to assure that the private sewage disposal system will correctly perform for its intended life.

Chapter 5 Contents			
Section	**Subject**	**Section**	**Subject**
501	General	**504**	Tanks
502	Identification	**505**	Pipe, Joints and Connections
503	Performance Requirements	**506**	Prohibited Joints and Connections

Chapter 6 Soil Absorption Systems

The design of soil absorption systems depends heavily on the result of the tests and evaluation of the site soil conditions required in Chapter 4. Where soil is less permeable, the area of the soil absorption must be large as compared to that required for soils that are highly permeable. The type of building that is being served by the

private sewage disposal system also affects the size of the planned soil absorption area. This chapter provides the methods for computing the required absorption area and details for the proper installation of the soil absorption systems.

Chapter 6 Contents			
Section	**Subject**	**Section**	**Subject**
601	General	**604**	Other Building Sizing
602	Sizing Soil Absorption System	**605**	Installation of Conventional Soil Absorption Systems
603	Residential Sizing		

Chapter 7 Pressure Distribution Systems

Chapter 6 deals with gravity-type soil absorption systems or systems where the effluent is allowed to drain out of the distribution piping by gravity. This chapter offers an alternate method of discharging the effluent into the ground by pressure means. As such, Chapter 7 provides the necessary details for designing the piping and pumping systems for pressure distribution systems.

Chapter 7 Contents			
Section	**Subject**	**Section**	**Subject**
701	General	**704**	Bed and Trench Construction
702	Design Loading Rate	**705**	Pumps
703	System Design	**706**	Dosing

Chapter 8 Tanks

Tanks are an integral part of any private sewage disposal system whether they serve as treatment (septic) tanks or merely just holding tanks for leveling the peaks in flow to the system. Where tanks are used for treatment, the dimensions, volume and location of internal features are very important to assure that the solid wastes are kept within the tank so as to not clog the effluent distribution system. Where tanks are used for holding purposes, they must be sized large enough to accommodate the total of peak flows coming from a building. Chapter 8 provides the necessary requirements for tanks.

Chapter 8 Contents			
Section	**Subject**	**Section**	**Subject**
801	General	**804**	Chemical Restoration
802	Septic Tanks and Other Treatment Tanks	**805**	Holding Tanks
803	Maintenance and Sludge Disposal		

Chapter 9 Mound Systems

Mound systems are another method for applying the effluent from a private sewage disposal system to the soil. This type of system may be advantageous in some localities due to the existing soil conditions. Chapter 9 has specific requirements for soil and site evaluations for mound systems.

Chapter 9 Contents			
Section	**Subject**	**Section**	**Subject**
901	General	**903**	System Design
902	Soil and Site Requirements	**904**	Construction Techniques

Chapter 10 Cesspools

Although prohibited from being installed as a permanent private sewage disposal system, cesspools may be necessary where permanent systems are under repair, or are being built. Chapter 10 provides the details for constructing a cesspool.

Chapter 10 Contents	
Section	**Subject**
1001	General

Chapter 11 Residential Waste Water System

Another method of private sewage disposal is a small waste water treatment plant. Where permitted, these systems can discharge effluent directly to streams and rivers. Chapter 11 specifies the standard to which waste water treatment plants must conform.

Chapter 11 Contents	
Section	**Subject**
1101	General

Chapter 12 Inspections

The best soil and site analysis along with the best design will be rendered useless if the system is not installed according to the plans for the system. Chapter 12 provides requirements for inspection of private sewage disposal systems.

Chapter 12 Contents	
Section	**Subject**
1201	General
1202	Inspections

Chapter 13 Non-liquid Saturated Treatment Systems

In some locations, water for the flushing of wastes into and through a sanitary piping system is not available. For example, a toilet facility provided for a remote campground without running water would require such a system. Chapter 13 specifies the standard to which nonliquid saturated treatment systems must conform.

Chapter 13 Contents	
Section	**Subject**
1301	General

Chapter 14 Reference Standards

The code contains numerous references to standards that are used to regulate

materials and methods of construction. Chapter 14 contains a comprehensive list of all standards that are referenced in the code. The standards are part of the code to the extent of the reference to the standard. Compliance with the referenced standard is necessary for compliance with this code. By providing specifically adopted standards, the construction and installation requirements necessary for compliance with the code can be readily determined. The basis for code compliance is, therefore, established and available on an equal basis to the code official, contractor, designer and owner.

Chapter 14 is organized in a manner that makes it easy to locate specific standards. It lists all of the referenced standards, alphabetically, by acronym of the promulgating agency of the standard. Each agency's standards are then listed in either alphabetical or numeric order based upon the standard identification. The list also contains the title of the standard; the edition (date) of the standard referenced; any addenda included as part of the ICC adoption; and the section or sections of this code that reference the standard.

Appendix A System Layout illustration

Appendix A provides figures that illustrate various requirements in the body of the code. Figures A-1 through A-4 illustrate typical combustion air requirements. Figure A-5 illustrates the chimney connector clearance requirements of Table 803.10.4.

Appendix B Tables for Pressure Distribution Systems

Appendix B provides a sample permit fee schedule for mechanical permits. The local jurisdiction can adopt this appendix and fill in the dollar amounts in the blank spaces to establish their official permit fee schedule. The ICC does not establish permit fees because the code is adopted throughout the country and there are vast differences in operating budgets between different parts of the country, as well as between large and small municipalities within the same region.