



COURSE INTRODUCTION

ARE 459

CONTRACTS AND SPECIFICATIONS

BY

MOHAMMED JALALUDDIN

LECTURER

CONSTRUCTION ENGINEERING & MANAGEMENT DEPT

SEPTEMBER 9/2006



ARE 459 Overview

- Syllabus
- Text
- Course description
- Course objectives
- Software
- Group Presentations
- Guest Lectures
- Course Website
- Grading plan
- Class participation / feedback
- Research Project
- Assignments/ HWs
- Examinations



ABOUT ME

Mr. Mohammed Jalaluddin

CONTRACTS AND SPECIFICATIONS (ARE 459)

Contact Information & Class Timings

INSTRUCTOR:

Mr. Mohammed Jalaluddin

860-1623 (Day)

860-5221 (Evening)

Email: jalals@kfupm.edu.sa

OFFICE HOURS:

Office at 456 Building 19

Saturday 1:30 P.M. – 3:30 P.M.

Monday 1:30 P.M. – 3:30 P.M

After class and by appointment

TIME & PLACE:

Saturday, Monday and Wednesday

11:00 - 11:50 AM

Room 450 Building 19.

CONTRACTS AND SPECIFICATIONS (A

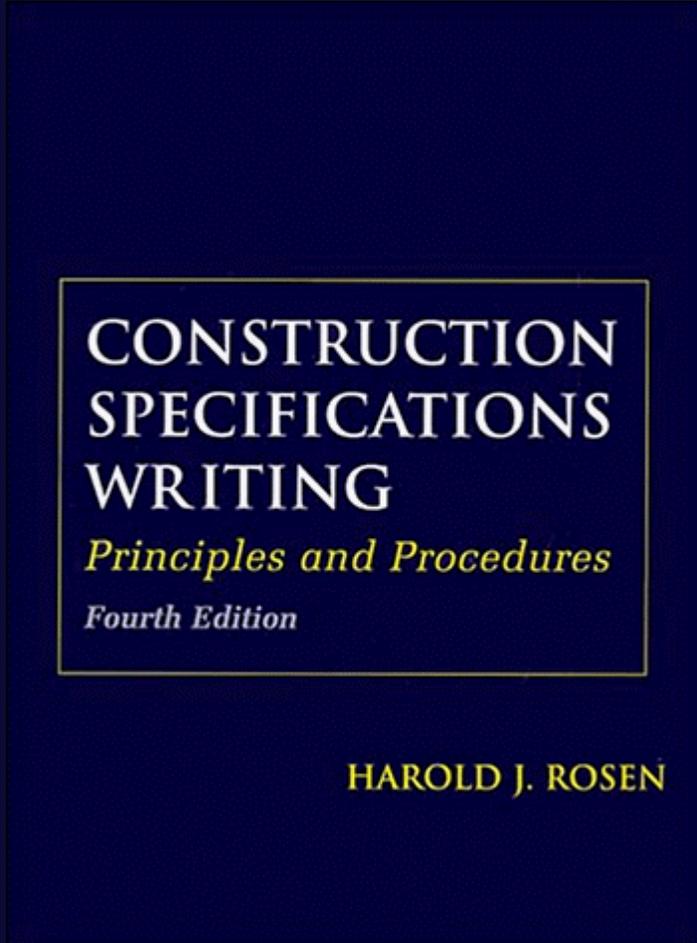


AGENDA

ARE 459: CONTRACTS AND SPECIFICATIONS

1. What are the aims & objectives of the course
2. What will be covered in this course?
3. What is the importance of this course ?
4. What is expected to be successful in course?

Text



- *“Construction Specifications Writing: Principles and Procedures”,
by. Harold J. Rosen, John Wiley & Sons.*
- *“Manual of Practice , The Construction Specification Institute (CSI)*
- *Class Notes and Handouts*



Aims

- The course is designed to give students, a working knowledge of construction contracts, contractual relationships within the construction industry and fundamentals of construction specification writing.



Objectives

- At the completion of this course, the student will:
 - Describe the relationships between the owner, contractor, and architect, as well as their roles, duties, and responsibilities. Understand the bidding process and bidding requirements
 - Demonstrate working knowledge of different types of contracts and understand the industry formats / various clauses contained in some of the AIA /EJCDC and Saudi Public contract documents.
 - Understand the purpose of specifications, their role and need. Describe the various types of specifications
 - Understand the CSI and MASTERFORMAT specification organization systems
 - Outline the principles of specification writing ,write simple specification, and explain the use of computerized specifications.

Chapter - I: Introduction to Construction Industry

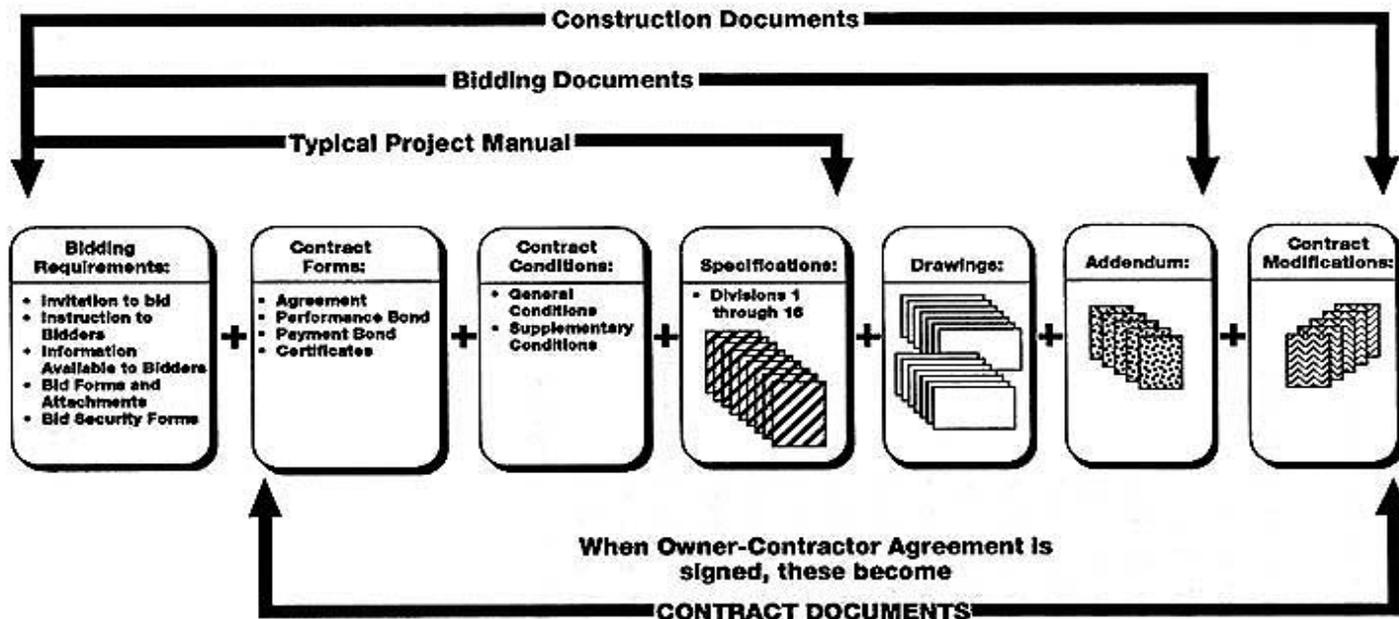
- ✓ Unique characteristics of Construction Industry
- ✓ Difference between Construction & Manufacturing Industry
- ✓ Size of Construction Industry ,types, construction participants
- ✓ Construction Industry in Saudi Arabia



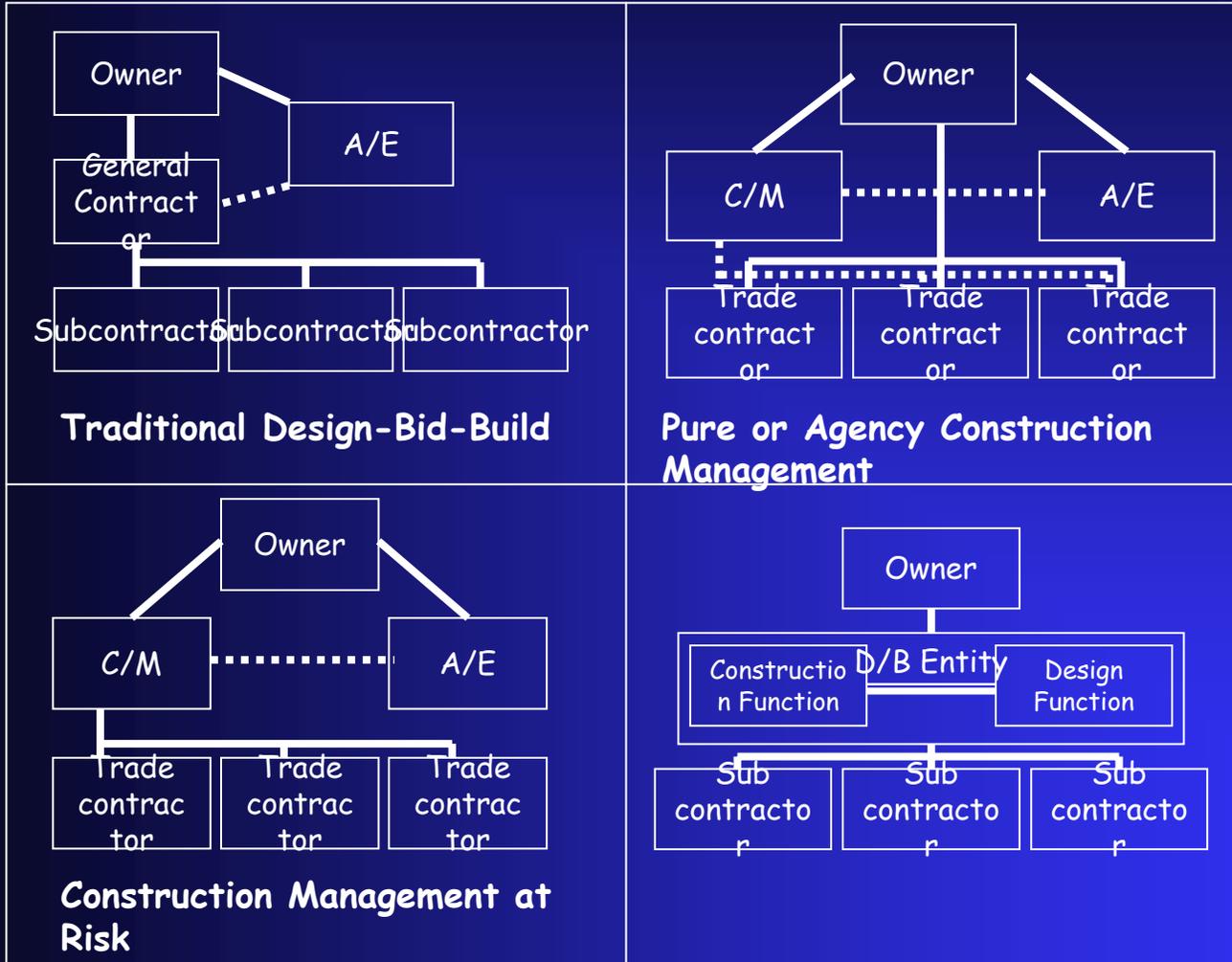
Chapter - 2: Construction Documents

- ✓ Contents and relationship between the documents that make up the Construction Documents
- ✓ Major Groups of documents, recognize the, bidding documents, contract documents

The Basic Relationships Between the Various Documents



Chapter - 3: Project Delivery Methods



✓

Project Delivery Methods

- ✓ Definition
- ✓ Types of Project Delivery Methods
 - ✓ Traditional
 - ✓ Design- Build
 - ✓ Professional Construction Management (PCM)
 - ✓ BOT (Build Operate Transfer)
- ✓ Advantages & Disadvantages of various PDM

Contractual Relationship
 Communicational Relationship

Chapter - 4: : Construction Contracts

- ✓ Contracts
- ✓ Definition : What is a contract ?
- ✓ Why use contracts in construction ?
- ✓ Contents of Construction contract ?
- ✓ Valid Contracts
- ✓ Parties to a construction contract ?
- ✓ Types of Construction contracts



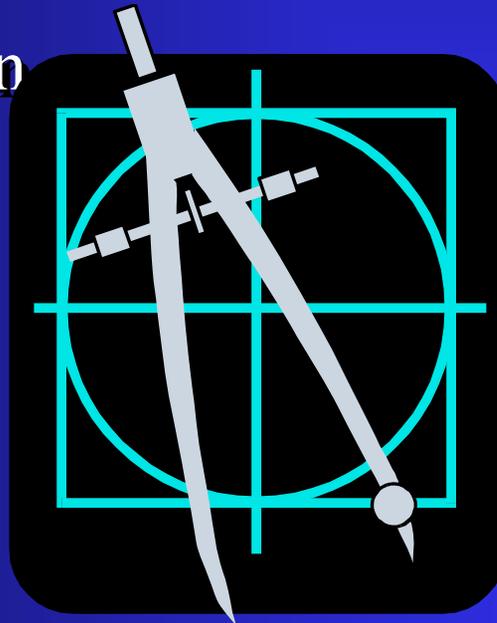
LEGEND

FFP	FIRM FIXED PRICE
CPFF	COST PLUS FIXED FEE

Chapter - 5: Introduction to Specifications

**Specifications, purpose, need ,team
and Role of specifications,
Evolution of Specifications,
Relationship with drawings and
specifications**

- The interpretation of construction specifications is an exact science!





Chapter - 6: TYPES OF SPECIFICATIONS

- ✓ Types: Method and Result System
- ✓ Descriptive Specifications
- ✓ Performance Specifications
- ✓ Reference Specifications
- ✓ Proprietary Specifications

Prescriptive (concrete mix)

Performance (fc' shall be 4000 psi.)

Proprietary (Saudi Ready-Mix)

Open (any supplier: Saudi, SBG Ready Mix, . .

.)

Or approved equal (supplier's mix approved by engineer)

Reference (Portland cement must "meet the requirements of ASTM C-150, Type_." ASTM C31, C39 for cylinder tests)



Chapter – 7: Organization of Specifications

◆ MASTERFORMAT NUMBERING SYSTEM

- ✓ CSI & MASTERFORMAT numbering system
- ✓ Specifications divisions, formats

Numbering

(Level 1: Division)

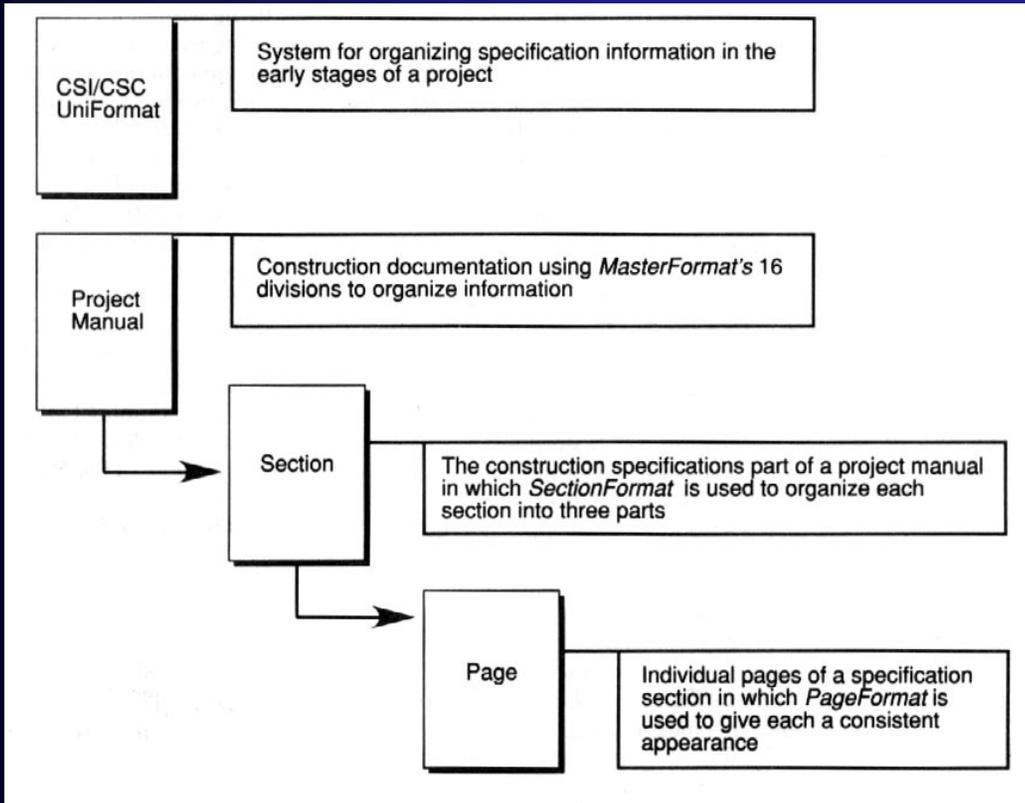


- ◆ 16 Divisions fixed in number and in title.
 - ◆ Division 01 - General Requirements
 - ◆ Division 02 - Site Construction
 - ◆ Division 03 - Concrete
 - ◆ Division 04 - Masonry
 - ◆ Division 05 - Metals
 - ◆ Division 06 - Wood and Plastics
 - ◆ Division 07 - Thermal and Moisture Protection
 - ◆ Division 08 - Doors and Windows
 - ◆ Division 09 - Finishes
 - ◆ Division 10 - Specialties
 - ◆ Division 11 - Equipment
 - ◆ Division 12 - Furnishings
 - ◆ Division 13 - Special Construction
 - ◆ Division 14 - Conveying Systems
 - ◆ Division 15 - Mechanical
 - ◆ Division 16 - Electrical

Chapter – 8

◆ CONCEPT OF TECHNICAL SECTION

- ✓ What is a Technical Section ?
- ✓ Examples of Technical Section
- ✓ Arrangement of the Technical Section
- ✓ Need for SECTIONFORMAT



Section Level Examples

02200 SITE PREPARATION

-210 Subsurface Investigation

Boring and Exploratory Drilling
 Core Drilling
 Geophysical Investigations
 Groundwater Monitoring
 Seismic Investigation
 Standard Penetration Testing
 Test Pits

-220 Site Demolition

Building Demolition
 Minor Site Demolition for Remodeling
 Selective Site Demolition

-230 Site Clearing

Clearing and Grubbing
 Selective Clearing
 Selective Tree Removal and Trimming
 Sod Stripping
 Stripping and Stockpiling of Soil
 Tree Pruning

-240 Dewatering



Chapter 9-

Specification Writing & Language

The phrase “...to standards...”

What standard? If the ASTM/ASCE, for example, be certain to understand just what portion or sections.

Methods of specifying Materials

Specification Language: Rules

Chapter 10 –Computerized Specifications

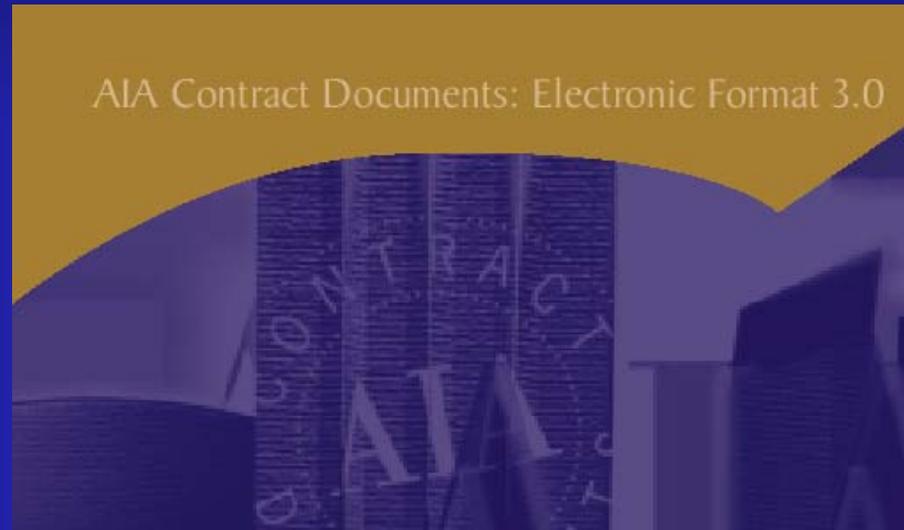
MasterSpec (AIA)
 SpecText (NIBS)
 BSD Perspective

Many manufacturers provide guide specifications in CSI MasterFormat that are easily adaptable to software systems.



Software –

- Contract Document Software (Expedition)
- Masterformat Numbering System
- MasterSpec (AIA)
- BSD Perspective
- AIA /AGC Contract Document software



Chapter 11: Bidding Requirements



CONTRACTS AND SPECIFICATIONS (ARE 459)

Bidding Documents Invitation to Bid Instruction to Bidders Bid Forms

INVITATION TO BID

January 1, 1999

John Jones, Architect
123 Main Street
New York, NY 00001

LIBRARY BUILDING
FIRST AVENUE AND MAIN STREET
NEW YORK, NEW YORK

1. Sealed bids for the construction of the project above for the City of New York will be received by the office of John Jones, Architect, until 1.00 P.M. EST, February 1, 1999 (and then publicly opened).
2. In general, the building is a two-story structure including a basement, and is approximately 75 ft by 200 ft in size. The frame and slabs are reinforced concrete, and the exterior consists of an aluminum curtain wall.
3. (Bids will be based on a single lump-sum contract.) Bids will be received for segregated contracts consisting of General Construction; Plumbing, Heating, Ventilating, and Air-Conditioning; and Electrical Work.
4. Contract Documents may be examined on and after January 1, 1999, at the office of the Architect and at the following Builder's Exchanges:
 - a.
 - b.
 - c.
5. Contract Documents may be obtained at the office of the Architect on or after January 1, 1999, by depositing a check in the amount of _____ per set, payable to the Architect. Deposits will be refunded to Bidders who return the documents in good condition within 10 days after the opening of bids.
6. Bid security in the form of a bid Bond or certified check made payable to the City of New York, in an amount equal to 5% of the bid, will be required. No Bidder may withdraw his bid within 30 days after the actual date of the opening thereof.
7. Guaranty Bonds in the form of a Performance Bond and a Labor and Materials Payment Bond, in an amount equal to 100% of the bid, will be required.

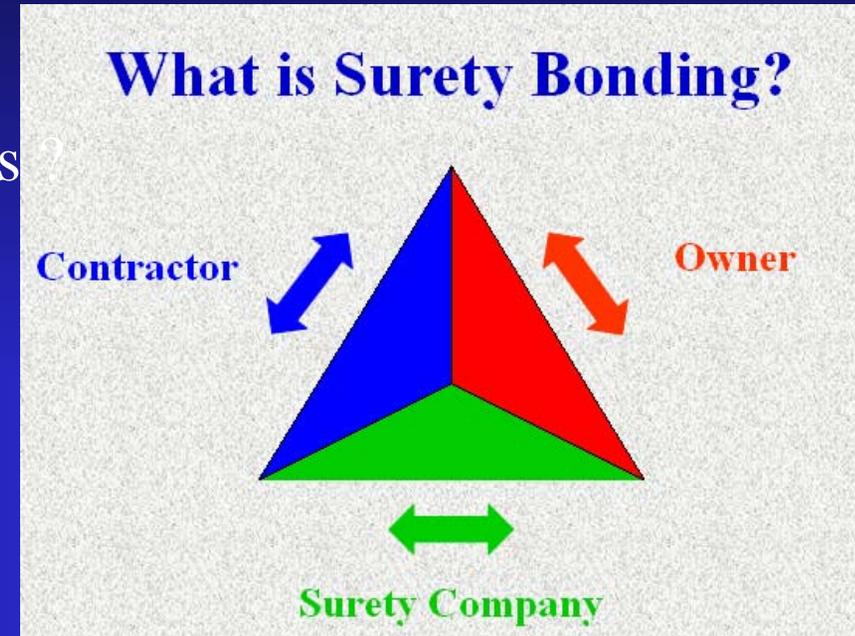
Exhibit 9-1. Invitation to Bid sample.

Chapter 12: Construction Bonds



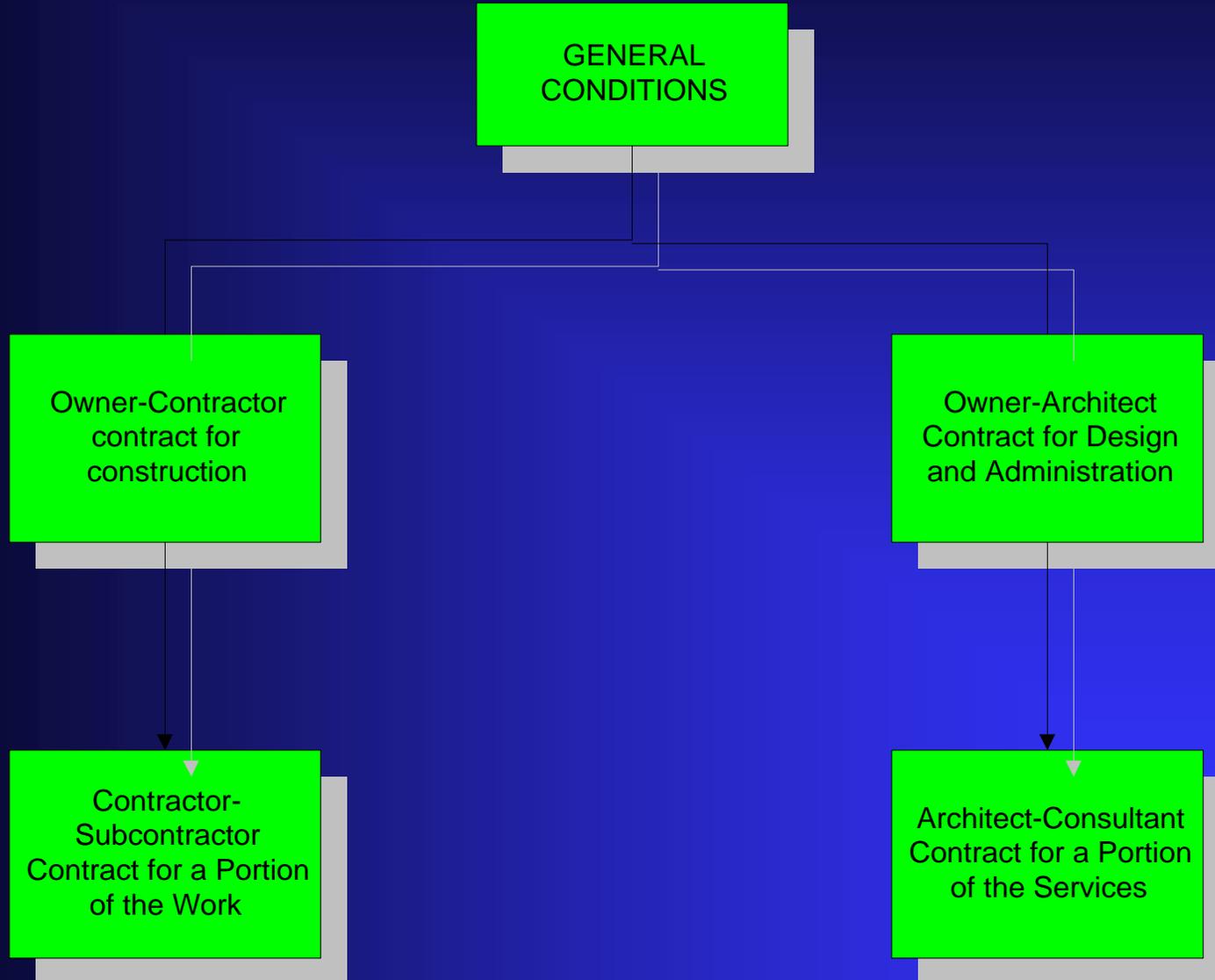
Construction Bonds

- Definitions
- What are Construction Bonds?
- Purpose of Bonds
- Advantages of Bonding
- Types of Bonds
 - Bid Bond
 - Performance Bond
 - Payment Bond





Chapter 13: General Conditions: Definitions



Chapter 14: Duration and Price Terms

Construction Changes

Definition : What is
Change order, Addenda
Purpose, Format of Change
order, Addenda
Effect of changes on duration
and Price



CONTRACTS AND SPECIFICATIONS (ARE 459)

1997 EDITION

AIA DOCUMENT B151-1997

Abbreviated Standard Form of Agreement Between Owner and Architect

AGREEMENT made as of the _____ day of _____
in the year _____
(In words, indicate day, month and year)

BETWEEN the Architect's client identified as the Owner:
(Name, address and other information)

and the Architect:
(Name, address and other information)

For the following Project:
(Include detailed description of Project)

The Owner and Architect agree as follows.

1

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

SAMPLE • This standard document is NOT a model form. Its inclusion in the ARCHITECT'S HANDBOOK OF PROFESSIONAL PRACTICE does not constitute an offer of insurance or any other financial product. For more information on licensed reproduction, see the Introduction Sheet.


© 1997 AIA®
AIA DOCUMENT B151-1997
ABBREVIATED OWNER-ARCHITECT AGREEMENT

The American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20006-5292

Copyright 1974, 1978, 1987, ©1997 by The American Institute of Architects. Reproduction of the material herein or substantial quotation of its provisions without written permission of the AIA violates the copyright laws of the United States and will subject the violator to legal prosecution.
WARNING: Unlicensed photocopying violates U.S. copyright laws and will subject the violator to legal prosecution.



contract.

Saudi standard public works contract

and comparison with 3 STANDARD Forms

AGC : Associated General Contractors of America (AGC) Forms
AIA: American Institute of Architects (AIA) EJCDC Contract Forms
:The Engineers Joint Contract Document Committee

CONTRACTS AND SPECIFICATIONS (ARE 459)

1997 EDITION

AIA DOCUMENT B151-1997

Abbreviated Standard Form of Agreement Between Owner and Architect

AGREEMENT made as of the _____ day of _____ in the year _____
(In words, indicate day, month and year)

BETWEEN the Architect's client identified as the Owner:
(Name, address and other information)

and the Architect:
(Name, address and other information)

For the following Project:
(Include detailed description of Project)

The Owner and Architect agree as follows.


© 1997 AIA®
AIA DOCUMENT B151-1997
ABBREVIATED OWNER-ARCHITECT AGREEMENT

The American Institute of Architects
1735 New York Avenue, N.W.
Washington, D.C. 20006-5292

SAMPLE • This standard document is NOT a model form. Its inclusion in the ARCHITECT'S Handbook of Professional Practice does not constitute an offer of insurance or any other financial product. For more information on licensed reproduction, see the Introduction Sheet.

Copyright 1974, 1978, 1987, ©1997 by The American Institute of Architects. Reproduction of the material herein or substantial quotation of its provisions without written permission of the AIA violates the copyright laws of the United States and will subject the violator to legal prosecution.
WARNING: Unlicensed photocopying violates U.S. copyright laws and will subject the violator to legal prosecution.

Attendance and Participation:



Attendance and Participation:

Regular class attendance is compulsory and missing classes/assignment will lower the component of the grade. Students are expected to attend all lectures participate in the class discussion and submit all assignments on time. In case of absence, inform me *prior to the class through email* .

Quizzes and Assignments :

Quizzes (10) and Assignments will be conducted at regular intervals. Each student is responsible to submit assignments. 7 Assignments will be administered during this course. Professional presentation of homework assignments may be required. Late homework assignments will not be accepted.



GRADING

- Grading policy for this course will be based on the following table.

Assignments	10 %
Quizzes	15 %
Term Project	20 %
Midterm	25 %
Final Exam	30 %

CONTRACTS AND SPECIFICATIONS (ARE 459)



Week	Date	Lecture	Exams/Quiz/Assignments
1	Sept-9 (S)	Course Introduction, The Construction Industry	
	Sept-11 (M)	Parties involved in design & construction process and roles	
	Sept 13 (W)	Types of construction projects	
		Characteristics of construction projects	
2	Sept-16 (s)	Construction documents-I	
	Sept-18 (M)	Construction documents-II	Assignment # 1
	Sept 20 (W)	Various documents, its purpose/need and format	Quiz # 1
3	Sept-23 (s)	National Holiday	
	Sept-25 (M)	Project delivery methods	Term Project Selection
		• Traditional	
		• Design-build	
		• Construction management	
	• BOT		
Sept-27 (W)	Construction Contracts	Quiz # 2	
4	Sept-30 (S)	Types of Construction Contracts, Advantages & disadvantages	
	Oct 2(M)	Introduction, Specifications, purpose, need and Role of specifications, Evolution of Specifications, Relationship with drawings and specifications	Assignment # 2
	Oct 4 (W)	Specifications divisions, formats	
Organization of specs		Quiz # 3	

contd



CONTRACTS AND SPECIFICATIONS (ARE 459)

5	Oct 7(S)	Technical section	Term Project Progress Report -I
	Oct 9 (M)	Methods of specifying/Types of specifications/	
	Oct 11 (W)	Specification writing /Language	
Specufying Materails		Quiz # 4	
October 12-27 Id al-Fitr Vacation			
6	Oct 28 (S)	Systems Building & Perfomance Specification	
	Oct 30(M)	Systems Building & Perfomance Specification	Assignment # 3
	Nov 1 (W)	Specification writing Resources	
		Role of standards	
Master Guide specification		Quiz # 5	
7	Nov 4(S)	Green Specifications (Issues in specifying materials)	
	Nov 6 (M)	Issues in specifying materials	
	Nov 8 (W)	Computerized Specification : Demo Software	Quiz # 6
8	Nov 11 (S)	Midterm	
	Nov 13 (M)	Computerized Specification –I	
	Nov 15 (W)	Example of IT application for specification	
9	Nov 18 (S)	Saudi Pulic Works ccontract	Assignment # 4
	Nov 20(M)	Standard Contractual formats of AIA	
	Nov 22 (W)	Standard Contract Forms of AGC Contractual modifications/changes	
Duration and price terms		Quiz # 7	
10	Nov 25 (S)	Bidding Process & Requirements	Term Project Progress Report -II
	Nov 27 (M)	Bidding Process & Requirements	
	Nov 29 (W)	Invitation to Bid/Instructions to bidders/Bid Form	
		Examples	

contd



CONTRACTS AND SPECIFICATIONS (ARE 459)

11	Dec 2 (S)	Construction Bonds	Assignment # 5
	Dec 4 (M)	Bid Bond, Payment Bond, Performance Bond	
	Dec 6 (W)	Case studies in Bonds	Quiz # 8
Bonds Availability in Saudi Arabia			
12	Dec 9 (S)	Term Project Follow-up	Assignment # 6
	Dec 11 (M)	Conditions of Contract	
	Dec 13 (W)	General condition of contract	
		Supplementary conditions of contract	Quiz # 9
13	Dec 16 (S)	Duration and Price Terms	Assignment # 6
	Dec 18 (M)	Change orders, Addenda, format	
	Dec 20 (W)	Causes and effect on Price and Duration	Quiz # 10
Dec 21-5 Jan		Id al-Adha Vacation	
14	Jan 6 (S)	General Condition of Contract-II	
	Jan 8 (M)	Supplementary Conditions of Contract	
	Jan 10 (W)	Misc	
15	Jan 13 (S)	CSI certification programmes	Assignment # 7
	Jan 15 (M)	CCCA : certified Construction Contract administrator	
	Jan 17 (W)	CCS : Certified Construction specifier	
		Last Day of Classes	Term Project Final Report
16	20-30 Jan	Final Examination Week	Final Exam

THANK YOU



QUESTIONS

