

PROJECT DEVELOPMENT AND DOCUMENTATION [PDD]; 4 hr 15 minutes exam / 120 questions

notes: information in exam is at 3/4" or 1 1/2" scale
construction documents and details
less visual than PPD
more focused on mathematics and equations

PROJECT DEVELOPMENT AND DOCUMENTATION [PDD] references per HANDBOOK

PUBLICATIONS

- [/] architectural graphic standards (john wiley and sons) [AKA "AGS]
- [/] building construction illustrated (john wiley and sons).
 - *recommended to read all*
- [/] mechanical and electrical equipment for buildings (grondzik, kwok, stein and reynolds; john wiley and sons) [AKA "MEEB"]
 - *need recommendations for important chapters for this volume*
- [/] olin's construction principles materials and methods (simmons; john wiley and sons)
 - *need recommendations for important chapters for this volume*
- [/] **steel construction manual** (ingram; american institute of steel construction)
 - *need recommendations for important chapters for this volume*

CODES

- [] international building code 2012 (international code council).
 - *chapters 3 - 6 and 9, 10 and 11 (?)*
 - *note for testing purposes this is the 2012 version and charts in the exam or case study will be for the 2012 version.*
- [/] minimum design loads for buildings and other structures (7-10) (american society of civil engineers)
 - *need recommendations for important chapters for this volume*

AIA contract documents (not applicable)

PROJECT DEVELOPMENT AND DOCUMENTATION [PDD] references per MATRIX

- [] 2009 ASHRAE handbook; fundamentals, I-P edition (american society of heating, refrigeration, and air conditioning engineers)
- [/] the architect's handbook of professional practice (AIA; john wiley and sons) [AKA "AHPP"]
- [] architectural acoustics (egan; j ross/mcgraw hill)
- [] + architectural graphic standards (john wiley and sons) [AKA "AGS"]
- [] architectural graphic standards for residential construction (AIA; john wiley and sons)
- [] building codes illustrated: a guide to understanding the 2012 international building code (john wiley and sons)
- [] + building construction illustrated (ching; john wiley and sons)
- [] building structures (ambrose and tipeny; john wiley and sons)
- [] dictionary of architecture and construction (harris; mcgraw-hill)
- [/] fundamentals of building construction: materials and methods (allen and iano, john wiley and sons)
- [] heating, cooling, lighting: sustainable design methods for architects (lechner; john wiley and sons)
- [] the HOK guidebook to sustainable design (mendler, odell and lazarus; john wiley and sons)
- [] international building code 2012 (international code council)
- [] + mechanical and electrical equipment for buildings (grondzik, kwok, stein and reynolds; john wiley and sons) [AKA "MEEB"]
- [] mechanical and electrical systems in buildings (janis and tao; prentice hall)

- [] † **minimum design loads for buildings and other structures** (7-10) (american society of civil engineers)
- [] + olin's construction principles materials and methods (simmons; john wiley and sons)
- [] plumbing, electricity, acoustics: sustainable design methods for architecture (lechner; john wiley and sons)
- [] † **the professional practice of architectural working drawings** (wakita, bakhoum and linde; john wiley and sons)
- [] † **simplified engineering for architects and builders** (ambrose and tripeny; john wiley and sons)
- [] + † **steel construction manual** (ingram; american institute of steel construction)
- [] structural design: a practical guide for architects (underwood and chiuni; john wiley and sons)
- [] structures (schodek and bechthold; pearson / prentice hall)
- [] time-saver standards for architectural design: technical data for professional practice (watson and crosbie; mcgraw-hill)
- [] a visual dictionary of architecture (ching; john wiley and sons)

OTHER FELLOW TESTER RECOMMENDED REFERENCES

- [/] the architect's studio companion (allen and iano: john wiley and sons).
 - highly recommended. skip the parking chapter
- [/] FEMA 454: designing for earthquakes - a manual for architects (federal emergency management administration).
 - chapters 4 and 5 highly recommended. also 5.2.1 and 7.4.
 - <https://www.fema.gov/media-library/assets/documents/8669>
- [/] architects handbook of professional practice (john wiley and sons). AKA "AHPP".
 - 7.4 value analysis and 7.5 life cycle costing. also case studies pp. 568 - 572.
- [/] building codes illustrated: a guide to understanding the 2012 international building code (john wiley and sons)
 - *chapters 3 - 6, 7, 8 and 10*
 - note for testing purposes this is the 2012 version and charts in the exam or case study will be for the 2012 version.

THIRD PARTY STUDY MATERIALS

[] ballast 4.0

- [] SS
- [] BS / chapters 38 - 45
- [] BCDS / chapters 27 - 33
- [] SPD (?)
- [] PPP (?)

ballast 5.0

- [] SPD
- [] other (?)

KEY

+ a "matrix" reference that is also shown in the "References" for that division

† a "matrix" reference that is NOT also in the other division (i.e. if listing is in PPD then reference is not in PDD and vice versa. note this means ALL other "matrix" references listed are in both PPD and PDD)

-

PROJECT PLANNING AND DESIGN "SECTIONS"

section 1: integration of building materials and systems (35%)

section 2: construction documentation (35%)

section 3: project manual and specifications (15%)

section 4: codes and regulations (10%)

section 5: construction cost estimates (5%)

PROJECT PLANNING AND DESIGN "OBJECTIVES"

integration of building materials and systems

1.1 analyze the integration of architectural systems and technologies to meet project goals

- as an architect you will first need to be able to resolve and detail roof, curtain wall, cladding, window, floor, and other architectural systems, while also considering the detail requirements and capabilities of individual building materials.

1.2 determine the size of mechanical, electrical, and plumbing systems and components to meet project goals

- you must also be aware of the related building systems to identify and develop mechanical, electrical, and plumbing systems, including calculating the size of some system components, based on system type, system requirements, programmatic requirements, and other factors.

1.3 determine the size of structural systems to meet project goals

- you will need to be able to identify and develop structural systems, including calculating the size of some structural components based on the system type, system requirements, programmatic requirements, and other factors.

1.4 integrate specialty systems such as acoustics, lighting, fire suppression, conveying, security and communications to meet project goals

- you will need to be able to identify, develop, and integrate individual specialty system components based on system type, system requirement, programmatic requirements and other factors.

1.5 determine how to detail the integration of multiple building systems and technologies

- you must also be able to detail and resolve the intersection of roof, curtain wall, cladding, window, floor, structural, interior, and other architectural systems as they come together within a building project.

1.6 coordinate mechanical, electrical, plumbing, structural, and specialty systems and technologies

- you must identify and resolve conflicts between engineering systems (mechanical, electrical, structural) and other specialty systems as they integrate into the project. this also includes coordinating engineering systems with the architectural design to fulfill programmatic, system, and other project requirements.

construction documentation

2.1 determine appropriate documentation of building design

- architects must identify a drawing and documentation approach based on project complexity, materials and assemblies, delivery method, and other project or construction related requirements. throughout

project documentation, you must know how to refine, update, and make adjustment to the drawings to align with new or changing project requirements. throughout project documentation, you must know how to refine, update, and make adjustment to the drawings to align with new or changing project requirements.

2.2 determine appropriate documentation of site features

- architects must also coordinate with civil engineers, landscape architects, and other consultants to verify the documentation of site drainage, utilities, pedestrian and vehicular circulation paths, parking, grading, and other site features and structures. it is critical to ensure site documentation is coordinated with all project disciplines.

2.3 determine appropriate documentation of detailed building drawings within individual architectural systems

- you will need to resolve, detail, and document individual architectural systems such as partition types, expansion joints, windows, doors, louvers, stairs, and other systems based on constructibility, environmental, programmatic, and other building requirements.

2.4 apply standards required to assemble a set of clear and coordinated construction documentation

- as an architect, you will also need to determine the necessary drawings required to communicate an architectural design based on the project delivery method. this requires assembling these drawings into a clear set of construction documents and ensuring the quality of the documentation meets the appropriate standard of care.

2.5 determine impact of project changes on documentation requirements and methods to communicate those changes to owner and design team

- architects must incorporate value engineering, changes in scope, and owner or project team comments into the drawing set, and determine the impact of these changes on the project delivery method and schedule. you will also need to recognize when changes in scope or owner/project team comments require the architect to perform additional services.

project manual and specifications

3.1 identify and prioritize components to write, maintain, and refine a project manual

- you will need to be able to determine and assemble the content of a project manual, including the general conditions; instructions for procurement, bidding, and contracting; and project specific requirements. this also requires the identification and preparation of any additional exhibits or special conditions required for project execution.

3.2 identify and prioritize components to write, maintain, and refine project specifications

- project specification types will need to be established, and you will need to identify which divisions are necessary based on project requirements. you will also need to analyze, determine, and specify materials within a project, including general, product, performance, execution, and other specifications necessary to complete the project.

3.3 coordinate specifications with construction documentation

- you must also establish fully coordinated specifications with information found on the architectural construction drawings and consultant documents. this includes all materials, assemblies, hardware, methods, and other identified information.

codes and regulations

4.1 determine adherence to building regulatory requirements (IBC) at detail level

- it is critical to be able to apply the international building code to the design and documentation of a project, specifically building use and occupancy, means of egress, heights and areas, fire and smoke protection, MEP systems and structural systems, as well as material and assembly requirements.

4.2 determine adherence with specialty regulatory requirements at the detail level

- it is also important to be able to apply specialty regulations to the design and documentation of a project.. this specifically refers to the ADA requirements, energy codes, standards for historic preservation, IGCC, fair housing, environmental regulations, and the interpretation of provided local or site specific regulations

construction cost estimates

5.1 analyze construction cost estimates to confirm alignment with project design

- as an architect, you will need to compare and modify a construction cost estimate based on the development of a project, including value engineering, substitution of materials, and alignment with the project documentation requirements. you will need to utilize appropriate estimating techniques based on the project type, phase, delivery method or other requirements.

END