Managing Risk on Federal Projects

The GSA Perspective: Learning from our Legacy

Prof. Spiro N. Pollalis

Harvard University

2020 Project Delivery Symposium

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Santiago Calatrava
“if I were a painter…”

A Building Project has Stakeholders

Individuals or organizations actively involved

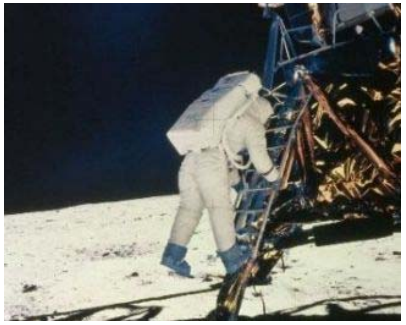
- Client
- Final user
- Project team
- Suppliers

or have an interest in the development

- Citizens
- Government
- Politicians
- Competitors

Project Management

The ART and TECHNIQUE to plan, organize, manage and control the RESOURCES needed to achieve a predefined set of OBJECTIVES of a PROJECT



Project:

- Leeds to a unique product, with characteristics defined, up to a point, as the project progresses
- A team is assigned for the duration of the project
- Temporary, with a Start and an End

Art:

- A methodology is not enough. Human factor...

Technique:

- Tools and processes

- Resources
  - People
  - Physical resources
  - Time
  - Money

- Objectives
  - Safety
  - Quality
  - Cost
  - Planning
  - Others

Objectives

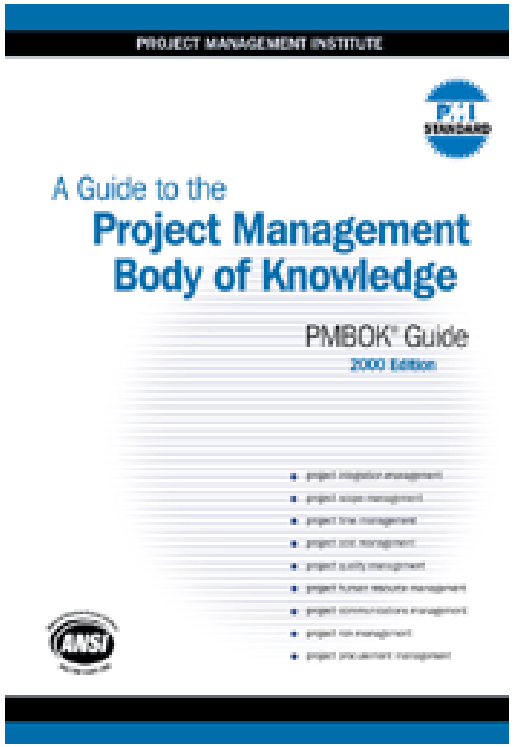
- The first and most relevant question to ask to properly manage a project is the definition and understanding of the OBJECTIVES and the PHILOSOPHY of the CLIENT

- Who is actually the client and the “non evident” objectives must be considered

Project Areas

PMI Functions

- Scope
- Quality
- Cost
- Schedule
- Team
- Integration
- Communication
- Risk assessment
- Purchasing



Project Management

- Project delivery; organization
- Clarify and structure responsibilities
- Communication/information transfer

Additional tasks

- Management of design
- Site Acquisition
- Demolition
- Image/public relations
- etc...

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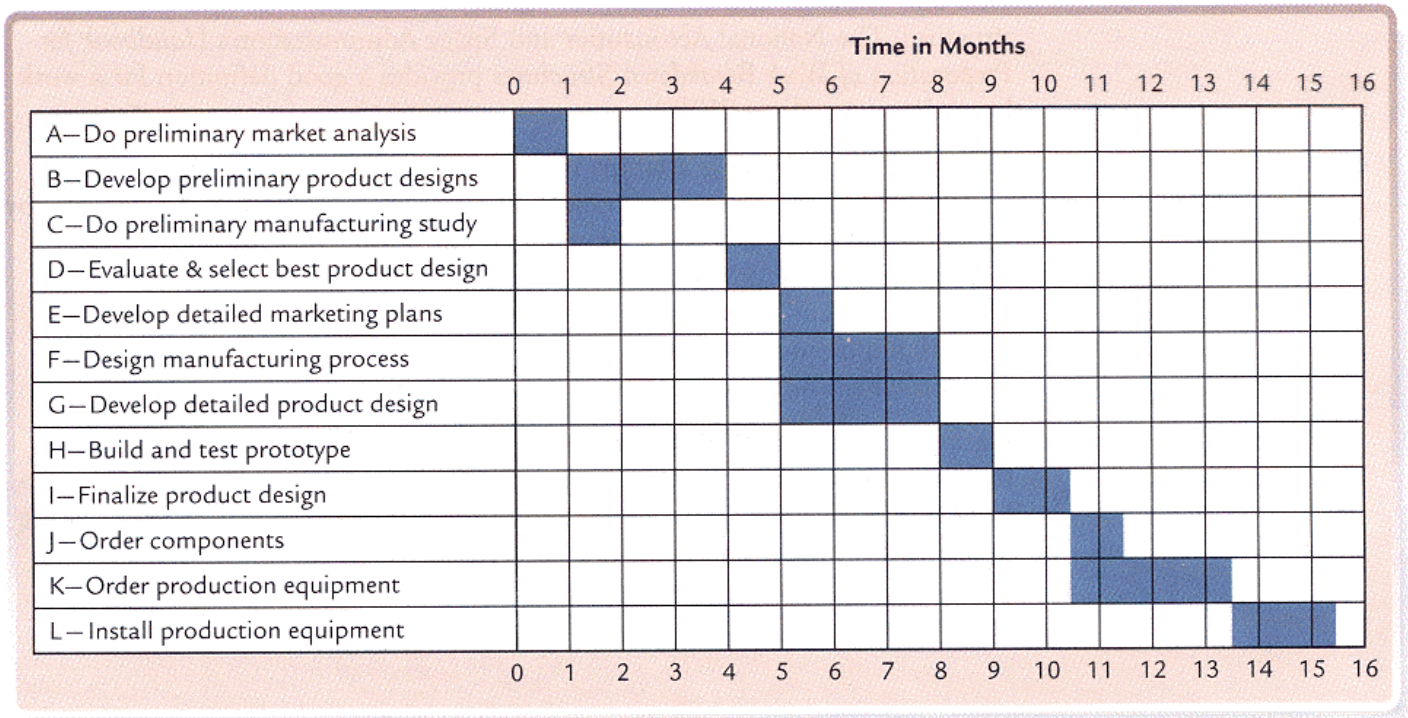
Tools

- Gantt diagram



Tools

Software tools

- They may save a lot of work . Theyt may even be essential.
- They are TOOLS. They do not think.
- They are TOOS. They are not objective.
- Their internal logic is not always applicable to the problem (resources)
- Not everyone can understand their output
- Common sense is essential to use them

GIGO; GARBAGE IN GARBAGE OUT

The client is most important

- Implication
- Clarity of objectives. Compromises
- Clear responsibility assignments
- Capacity and will to make decisions
- Capacity and will to have the decisions implemented

THE CLIENT IS THE ONLY SINGLE FACTOR ESSENTIAL FOR SUCCESS

The project manager

- Takes care of the team!
- Gets enough resources
- Looks for intelligent hard-working people
- Knows the team: competences, preferences
- Motivates
- Asks for top performance. Does not ask for the impossible
- Corrects errors
- Shares the success. Assumes the errors

The project manager

- Sets clear objectives and guidelines
- Shares information
- Gives freedom. Supervises progress. Helps
- Teaches. Educates
- Involves the members of the team in the meetings with the client, suppliers, contractors, users, etc.
- Promotes group feeling
- Avoids internal competition. Promotes cooperation

The project manager

- Documents: meeting minutes, reports, agreements, etc.
- Does not assume that everyone will fulfill his compromises. Supervises, verifies
- Checks the facts. Checks again
- Pays attention to relationships among people

The project manager

- Pays attention to delivery dates: supplies, permits, licences, etc.
- Keeps contigencies: budget, schedule...
- Analyzes the consequences of the problems
- Understands the state of mind of the client
- Impact of changes in the organization of the client
- Expectations of key participants

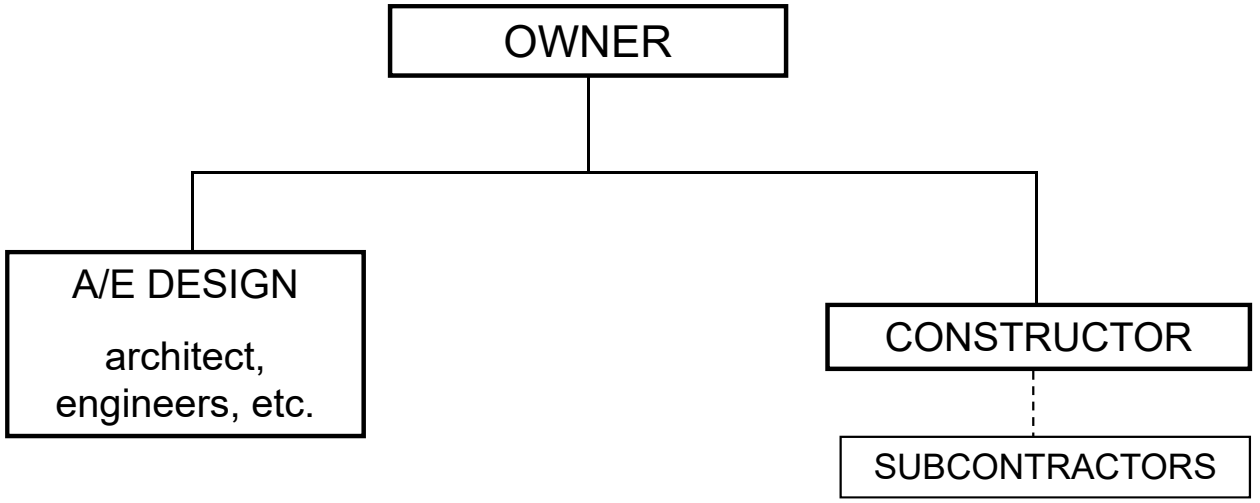
The project manager

- When problems appear...
  - Tries to keep calm. Does not lose objectivity. The situation could be worse...
  - Tries to find solutions from the very beginning. Avoids the temptation to start looking for culprits.
  - Goes to the client with the problem clearly defined and, if possible, with a solution.
  - Does not blame the client (at least not from the beginning)
  - It pays to be brave
  - Perseverance

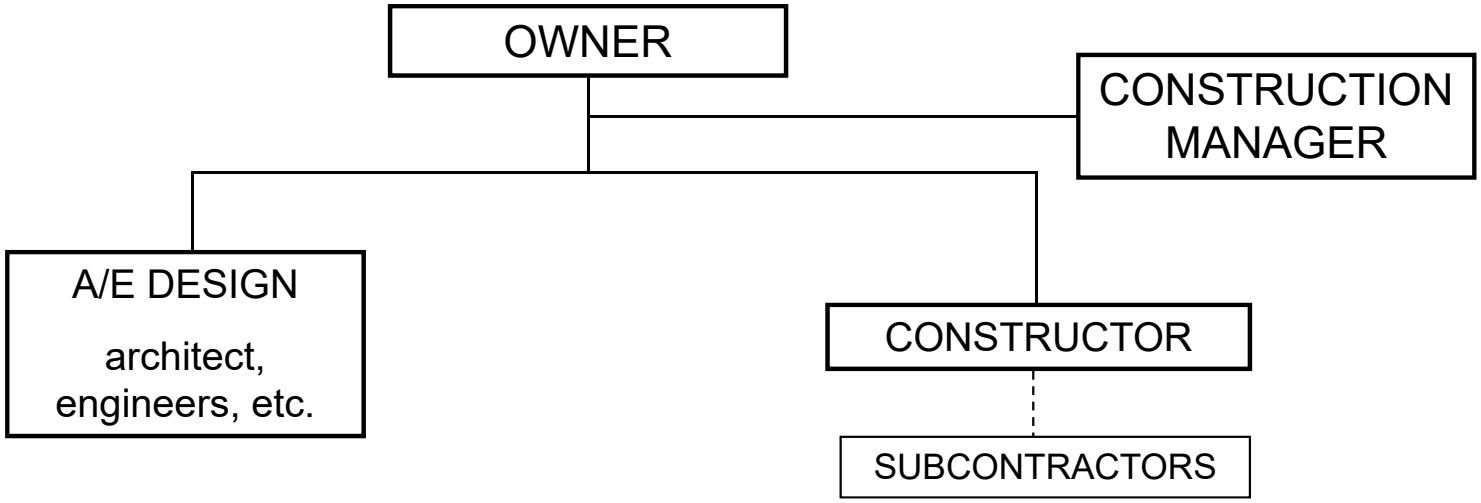
Key Point

- The Key Point is to develop TRUST
- Other issues are ABSOLUTELY IRRELEVANT if there is no trust
- The client always DOUBTS

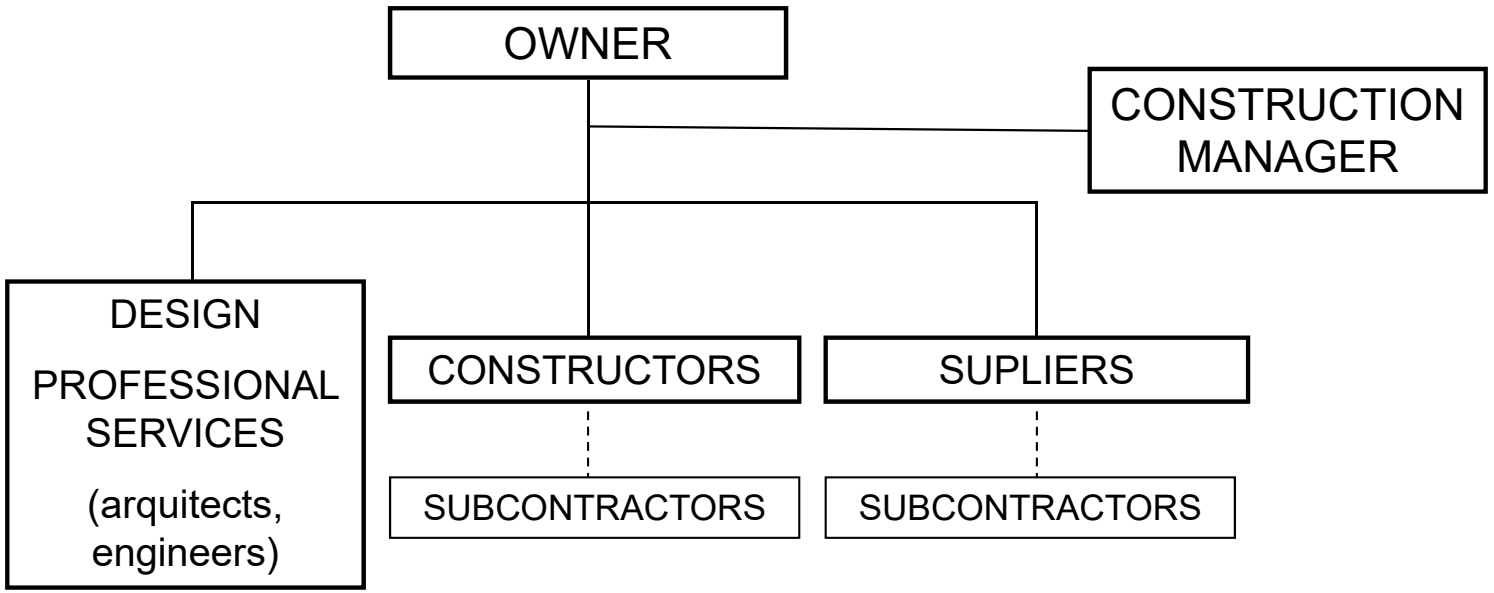
Traditional Project Delivery



Traditional Project Delivery

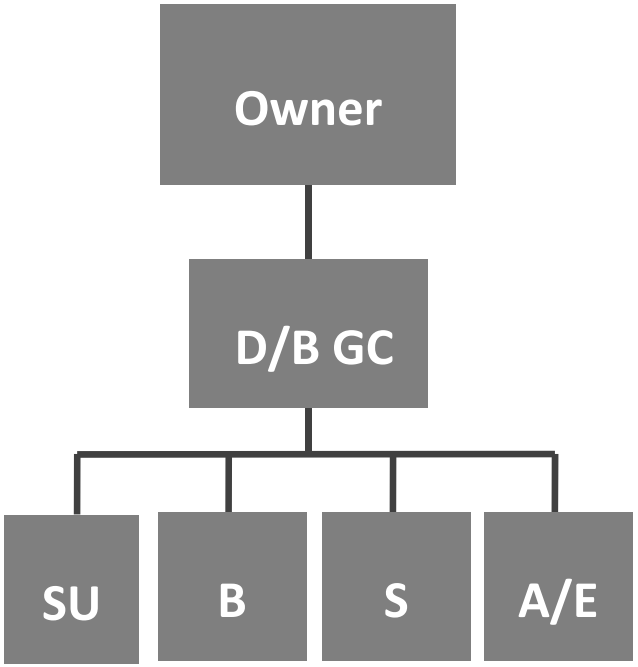


Traditional Project Delivery

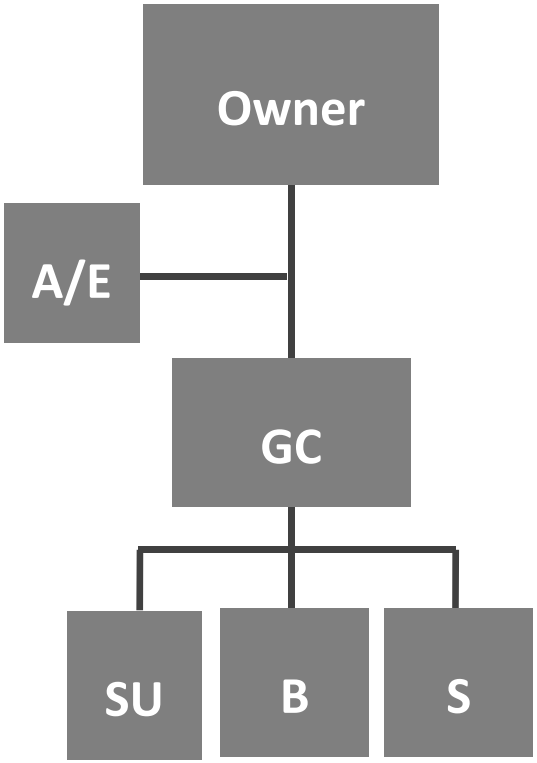


Organizational Diagrams of Delivery Methods

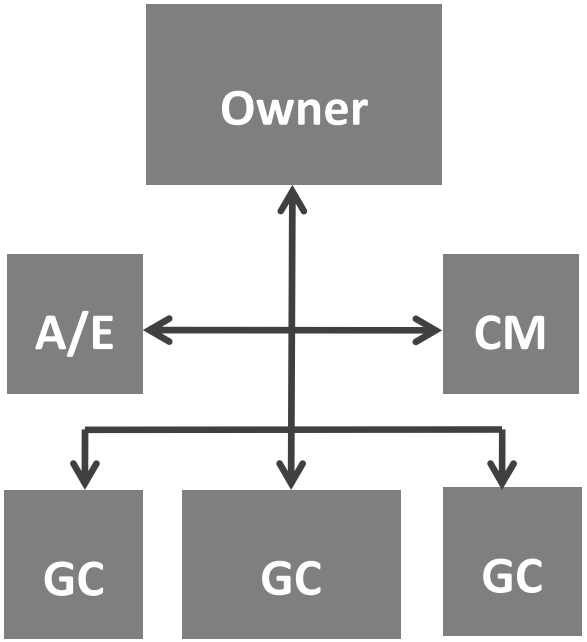
Design / Build



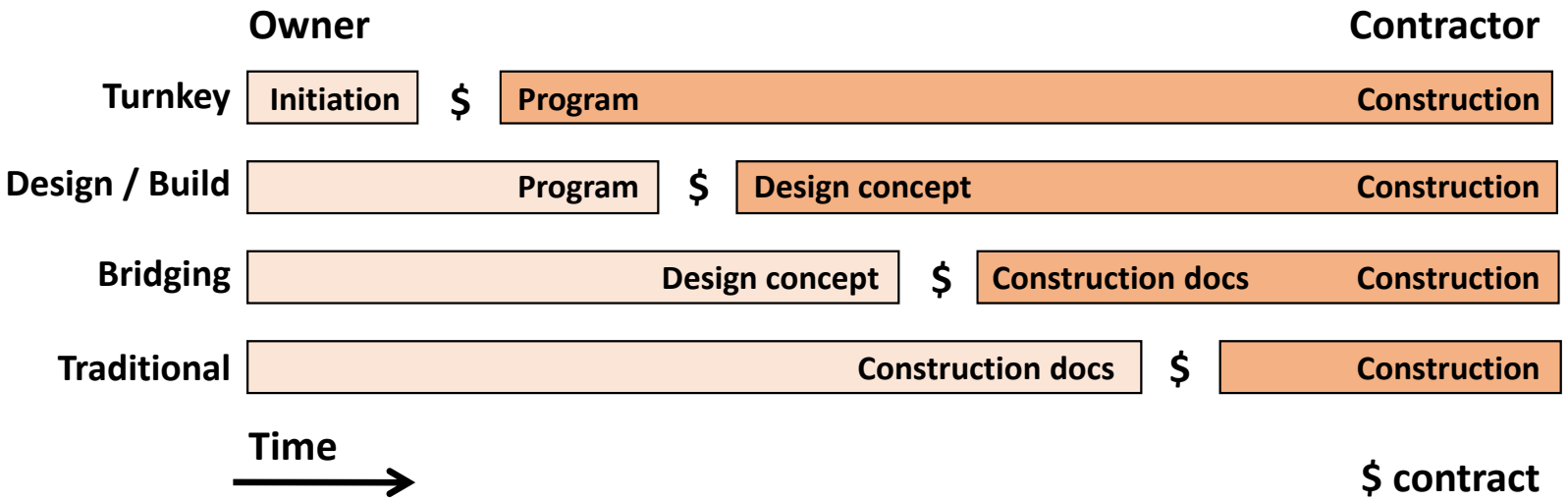
The traditional method



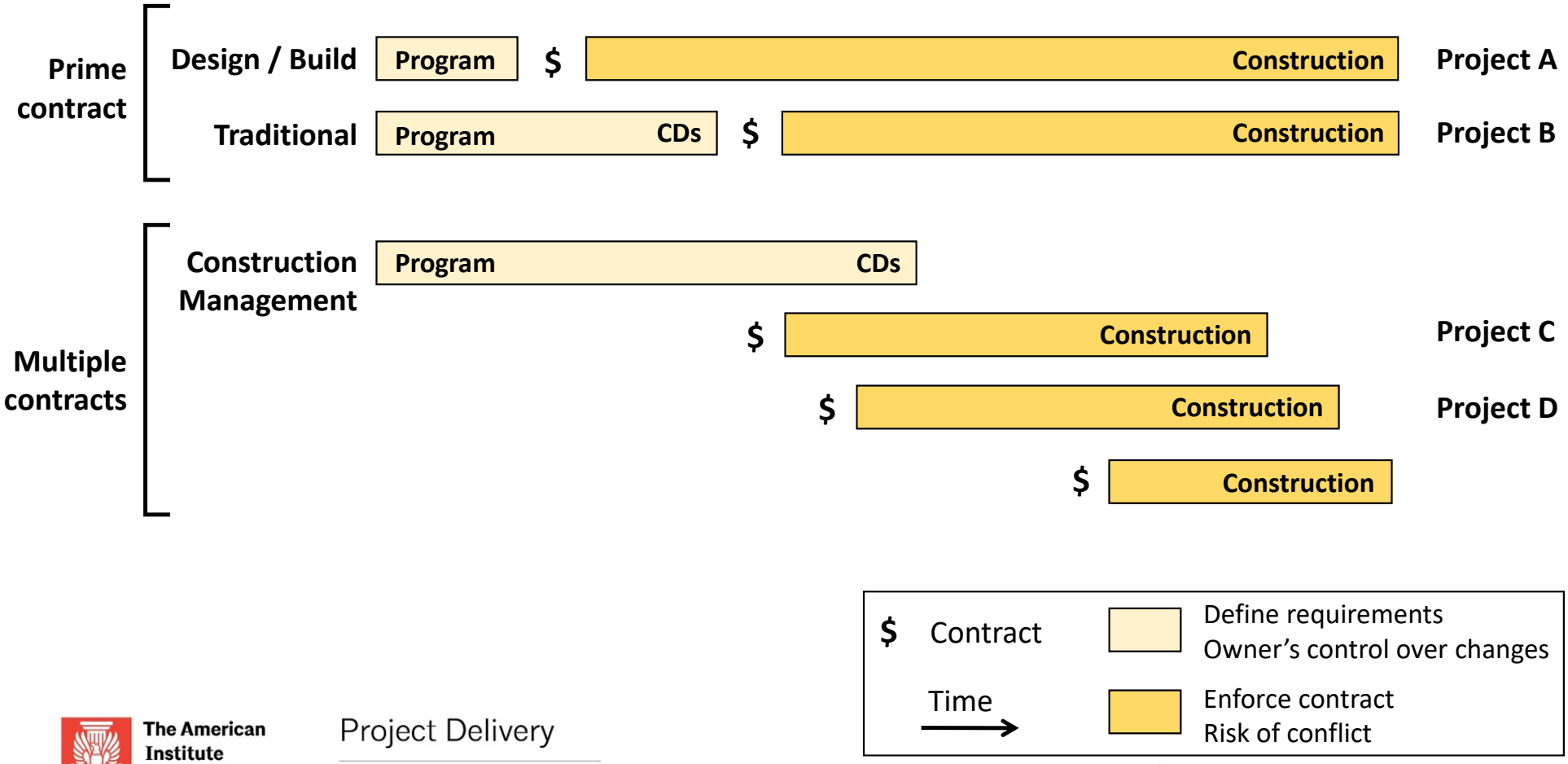
Construction Management



Contractual arrangements

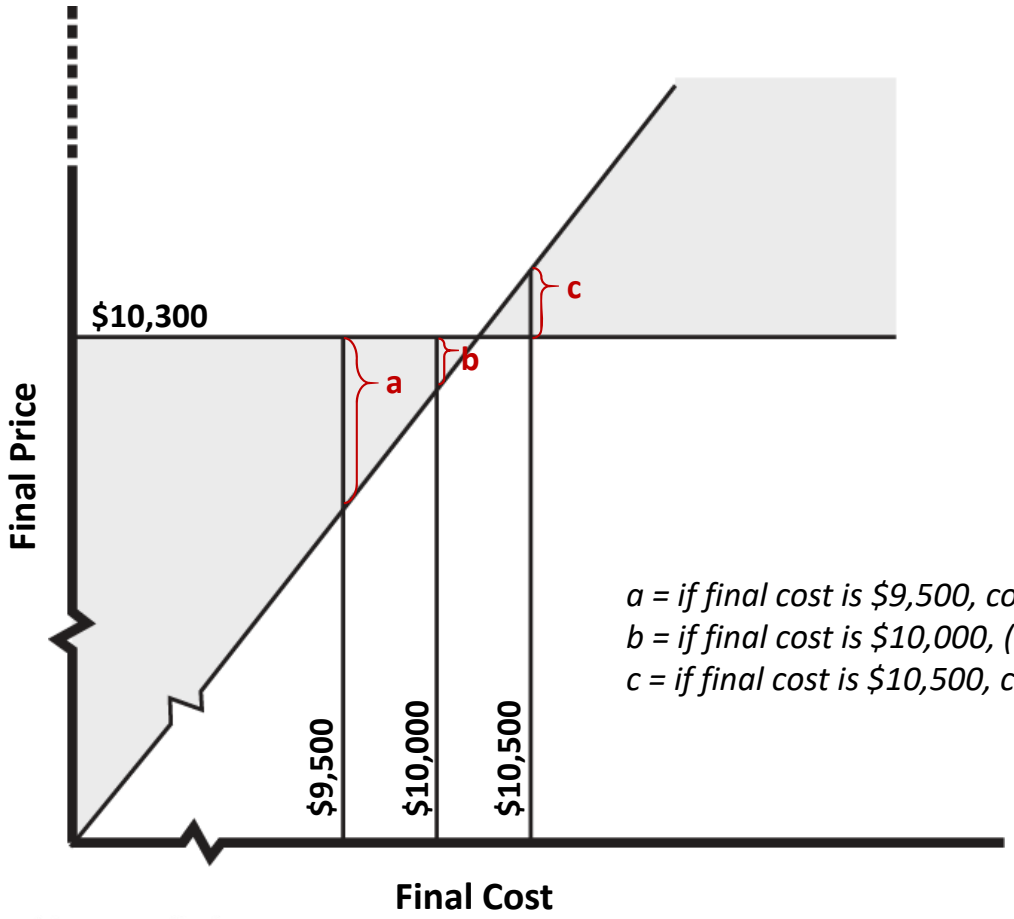


Delivery Methods observed in projects



Lump-sum Contract

Price is fixed at $10,300

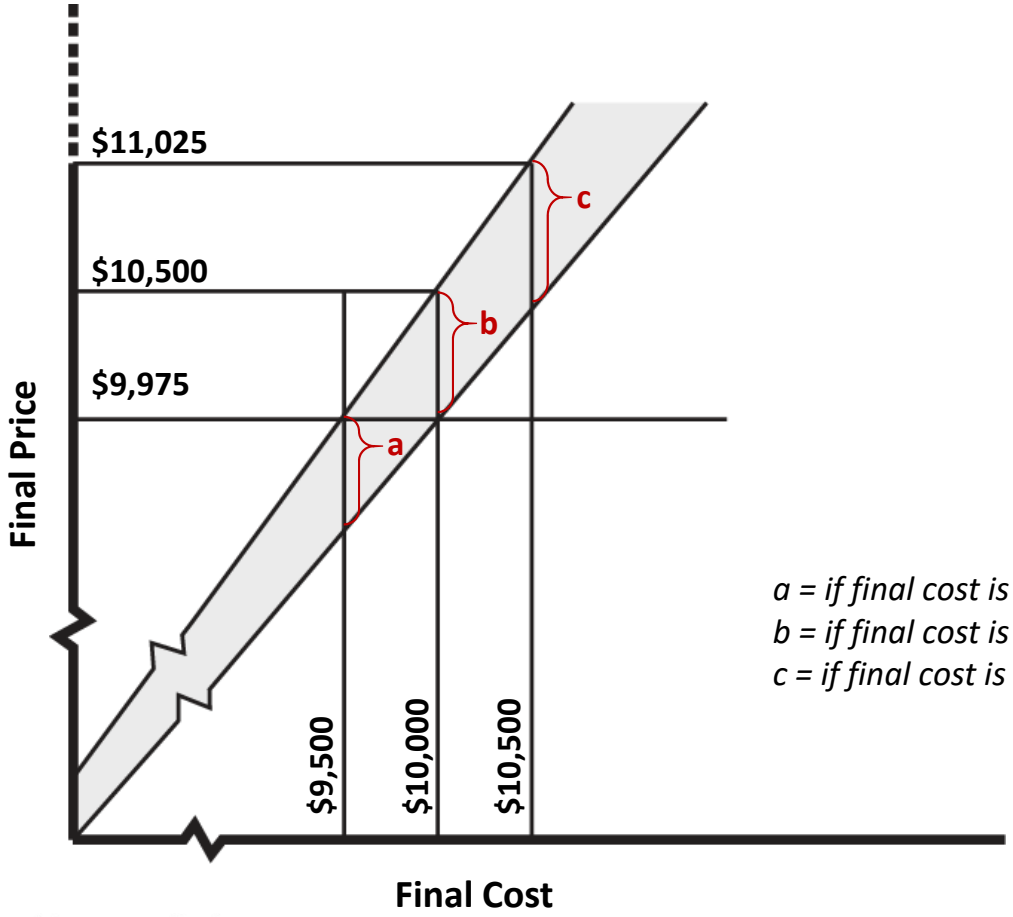


a = if final cost is $9,500, contractor profit is $800 (8.42%)
b = if final cost is $10,000, (as expected) contractor profit is $300 (3%)
c = if final cost is $10,500, contractor loss is $200 (-1.9%)

After J. Macomber, 1989

Time and Materials Contract

Price = cost plus 5%

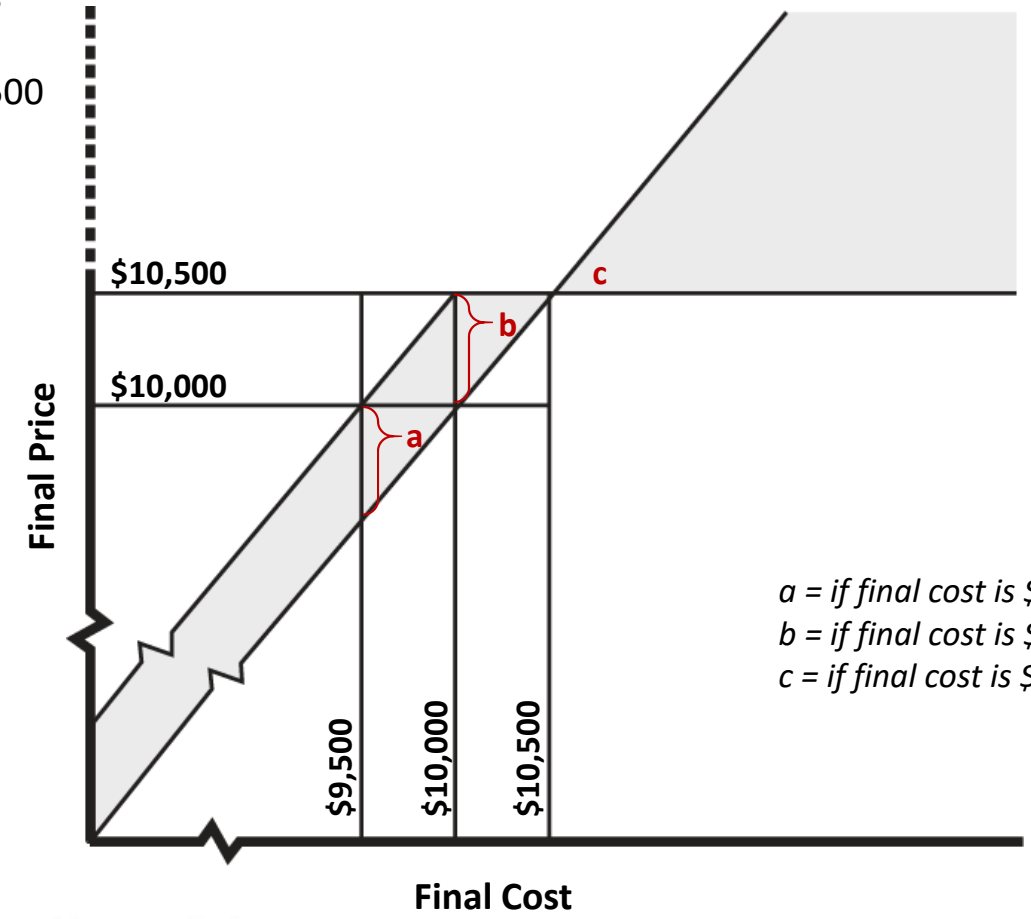


a = if final cost is $9,500, contractor profit is $475 (5%)
b = if final cost is $10,000, contractor profit is $500 (5%)
c = if final cost is $10,500, contractor profit is $525 (5%)

After J. Macomber, 1989

Guaranteed Maximum Price

Price = cost of work plus fixed fee of $500 with a maximum price of $10,500

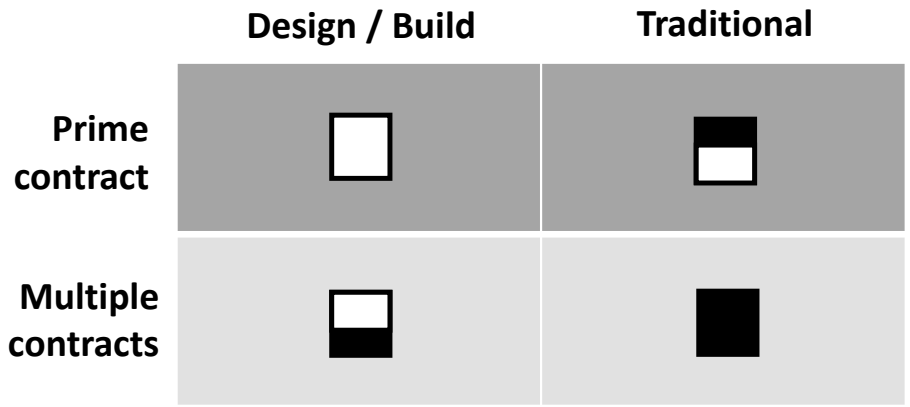


a = if final cost is $9,500, contractor profit is $500 (5,26%)
b = if final cost is $10,000, contractor profit is $500 (5%)
c = if final cost is $10,500, contractor profit is $0 (0%)

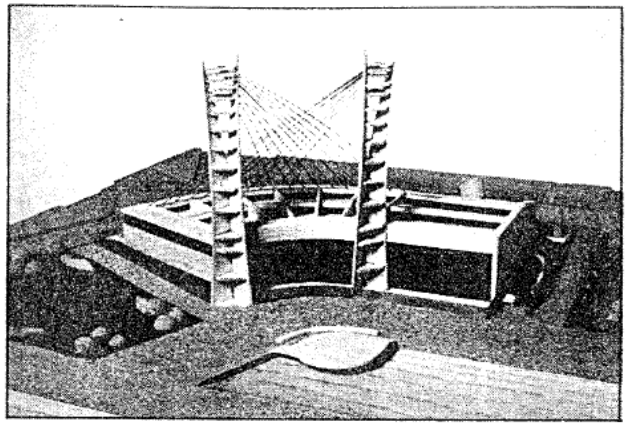
After J. Macomber, 1989

Owner's risks under contractual arrangements

- Financing and operation risks
- Design-related risks
- Construction coordination risks



Cruzcampo Pavilion (Seville 1992)



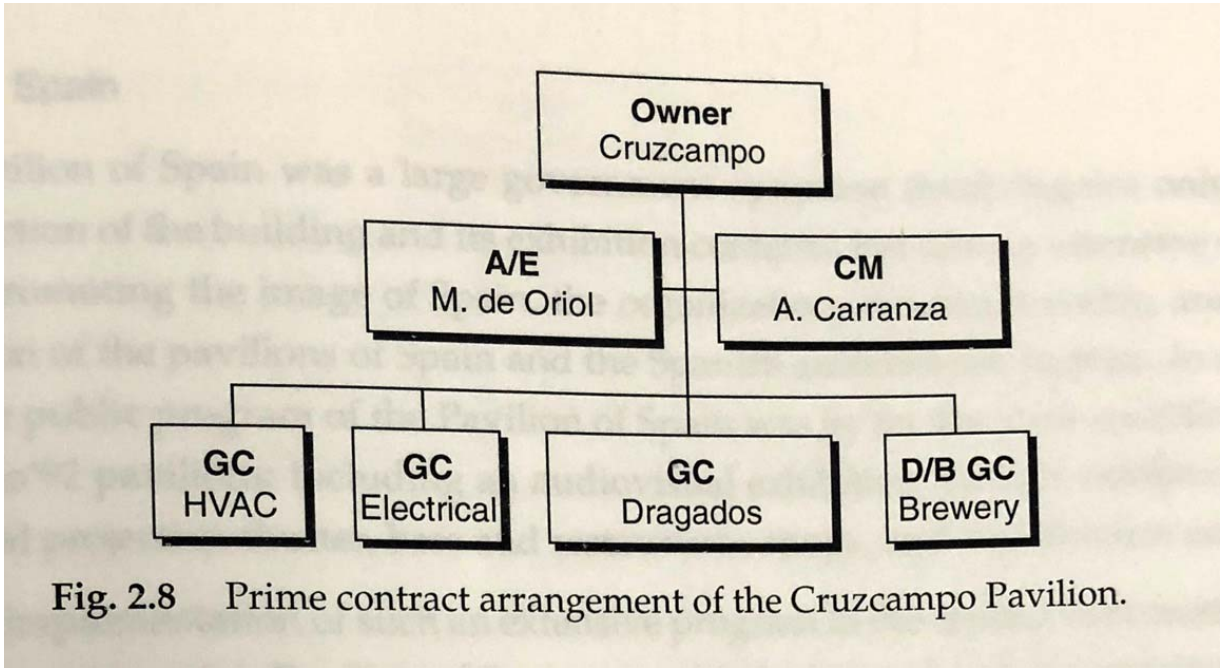
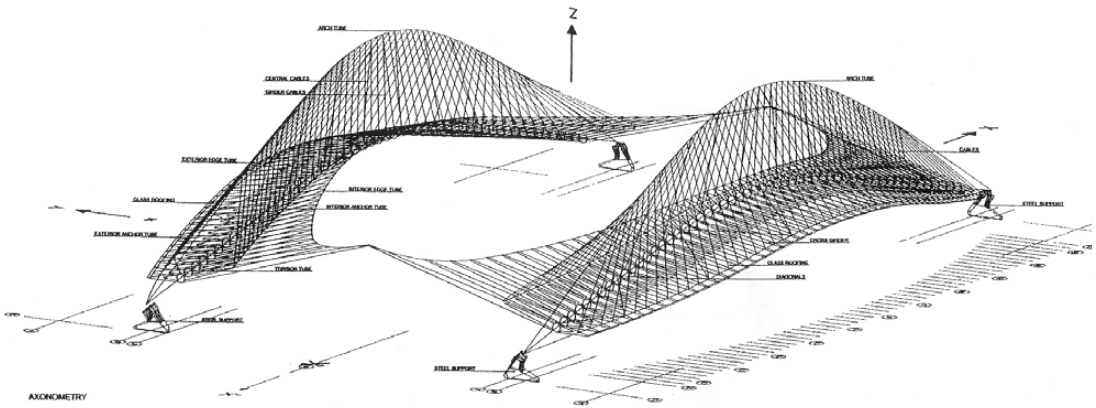
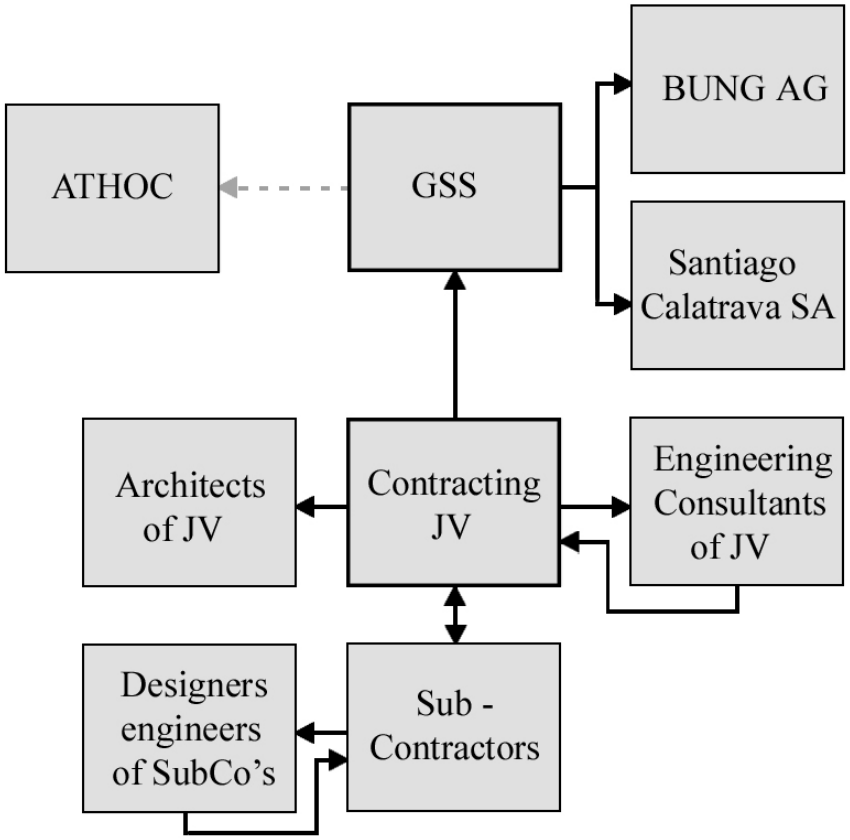


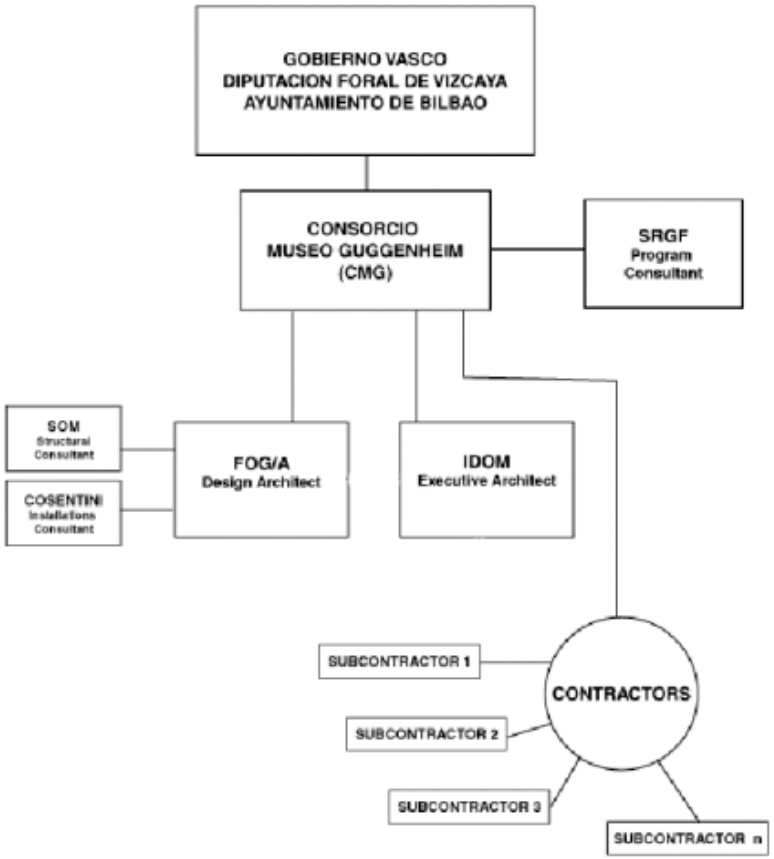
Fig. 2.8 Prime contract arrangement of the Cruzcampo Pavilion.

Athens Olympic Stadium

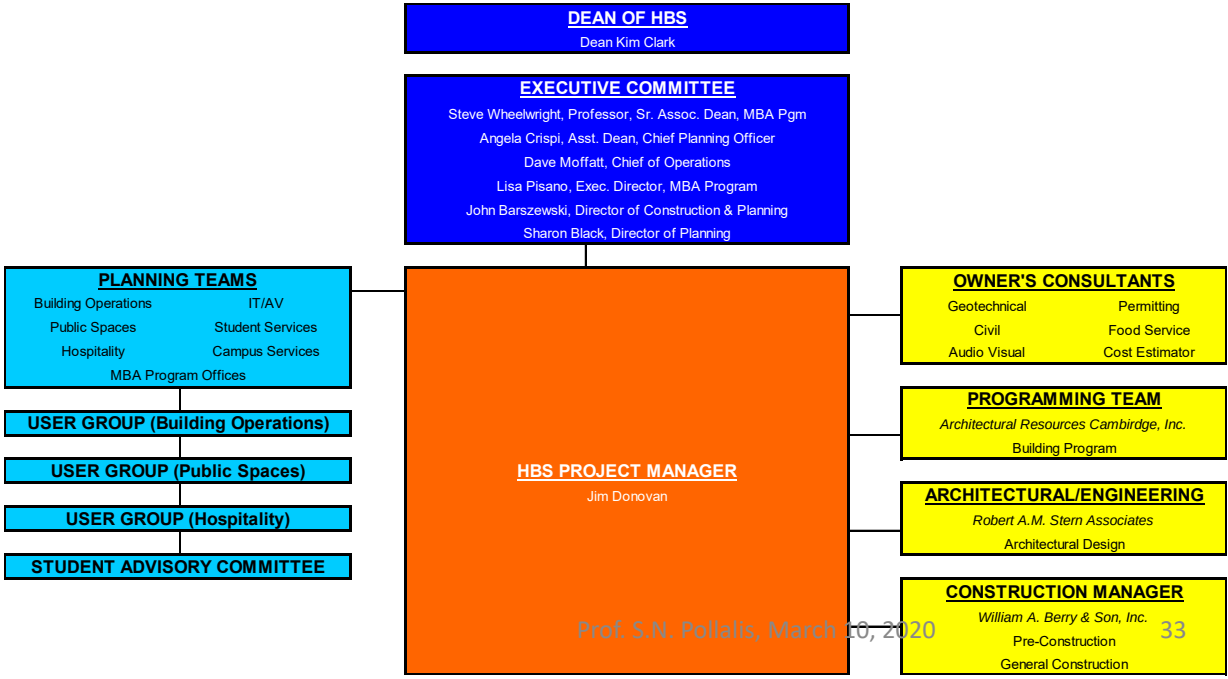




Bilbao Guggenheim Museum



Spangler Student Center, Harvard Business School



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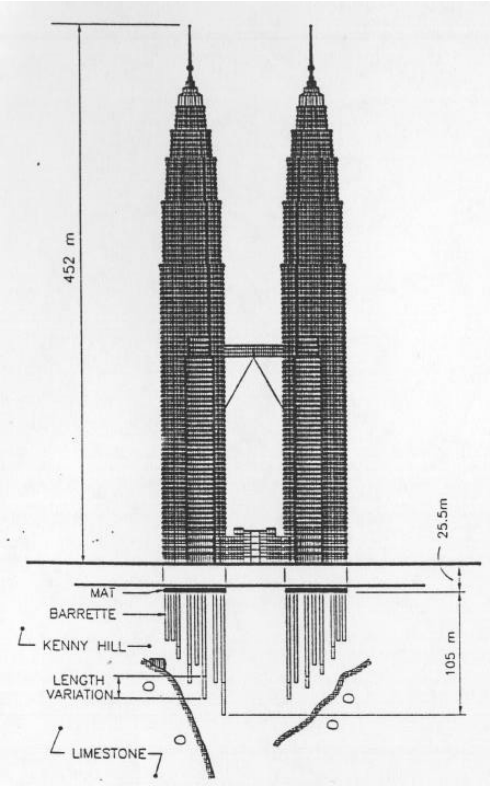
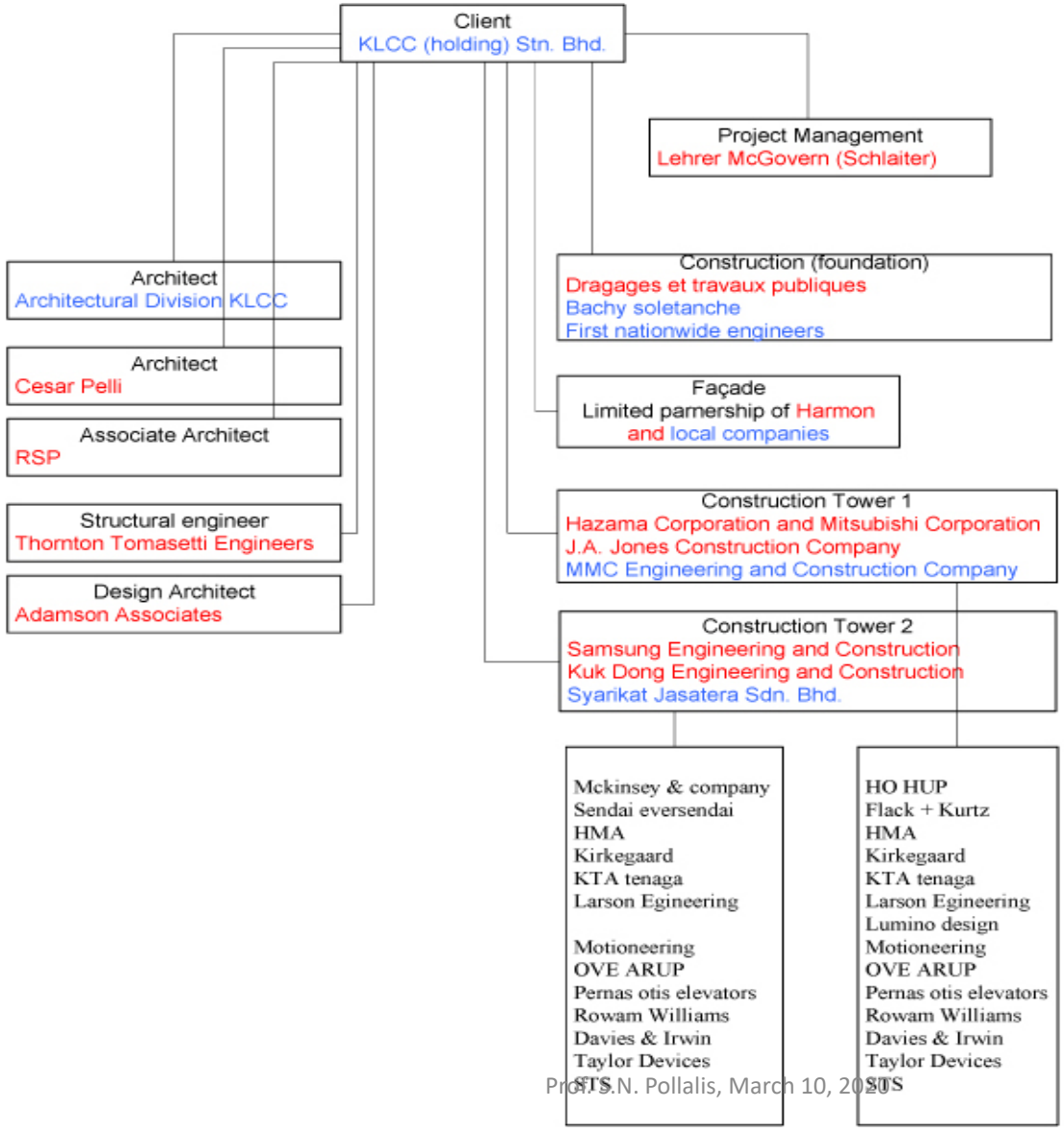
Petronas Towers





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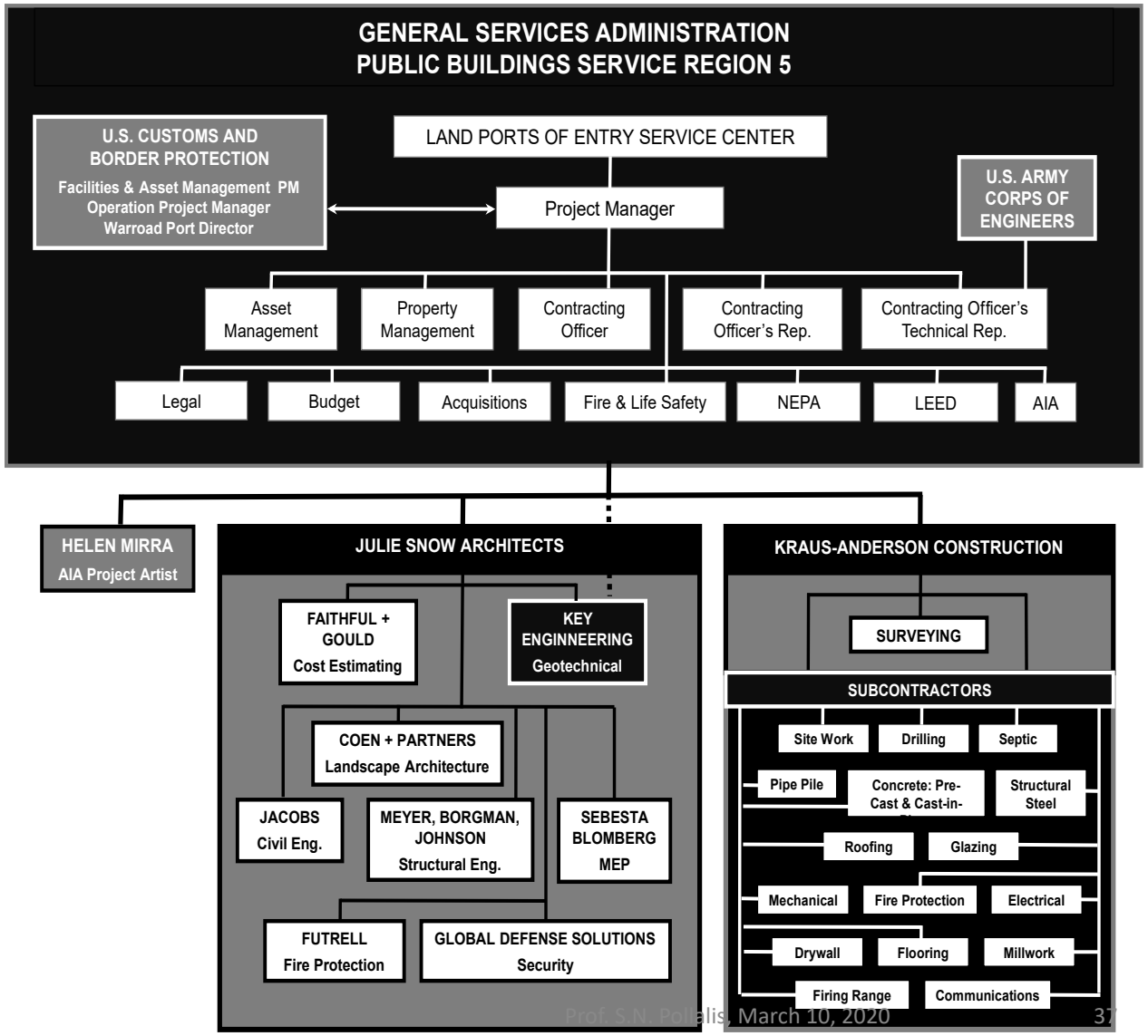
US 84 Mississippi River Bridge; Natchez-Vidalia Bridge

GSA Cases

- Federal Construction
  - Site Acquisition
- Renovations
  - Occupied Buildings
  - Sole Sourcing (rare)
- Build to Suit

Warroad, MI LPOE



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San Francisco FB

Social Security Administration
Department of Labor
Health and Human Services
Department of Agriculture
Federal Tenants

General Services Administration (GSA)
Public Buildings Service Region 9

Maria Ciprazo, Project Executive
John Nolte, Project Manager
Constance Russell, Contracting Officer

Sandy Henderson, Space Planning/Interiors
Melanie Norton, Real Estate

James Turrell
Ed Ruscha
Commissioned Artists

Dick Corporation
General Contractor

Subcontractors

Smith Group
Executive Architect

Rebecca Nolan, Principal in Charge
Carl Christiansen, Project Manager for Architecture
Lauryn Andresen, Project Manager for Interiors
John Gurga, Project Architect
Rick Pulley, Director of Interiors Studio

Morphosis
Design Architect

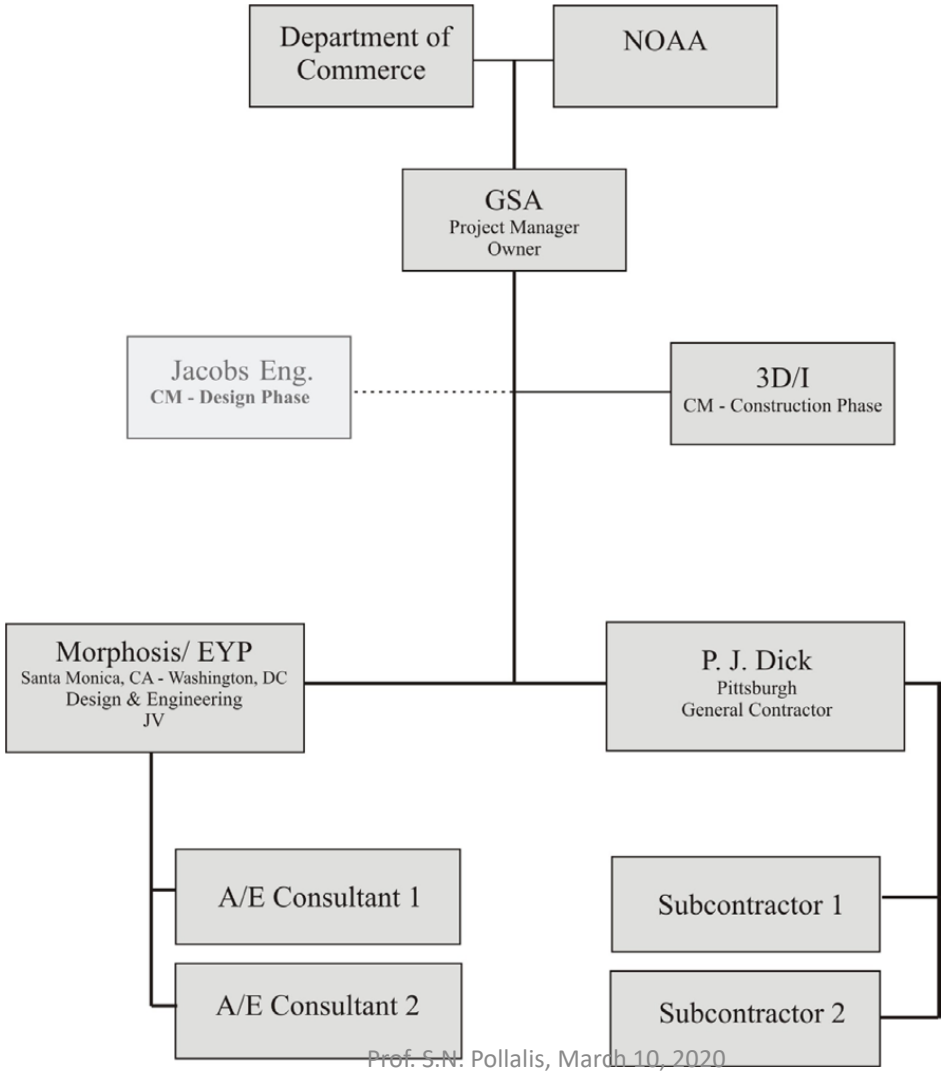
Thom Mayne, Lead Designer
Tim Christ, Project Manager
Brandon Welling, Project Architect
Eui-Sung Yi, Project Designer

Arup
Structural and Mechanical Engineers

Bruce Gibbons, Structural
Steve Ratchye, Structural
Erin McConahey, Mechanical

Other Consultants

NOAA



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Van Buren, ME, LPOE

Client & Tenant
GSA, Customs and Border Protection (CBP)

D/B contractor	CMa	Bridging/Concept AE	Cxa
J&J Contractors, Inc.	Coast & Harbor Associates	Julie Snow Architects	M.E. Group w & Sebesta Blomberg

Subcontractors			
D/B AE	Structural Engineer	M/E/P consultants & Civil Engineers	Landscape Architects
Robert Siegel Architects	Anastos Engineering Associates	ARUP New York	Sasaki Associates

Subcontractors							
Civil Engineering/ Traffic	Structural Engineer	Landscape Architects	Fire protection	Security	Archaeologist	Geotechnical engineer	Cost Estimating
Jacobs Engineering Group	Meyer Borgman Johnson	Coen + Partners	Futrell Fire Consult & Design	Global Defense Solutions	Ellen R. Cowie (Northeast Archaeology Research Center)	Key Engineering Group	Faithful + Gould

SSA NATIONAL SUPPORT CENTER

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General Contractor:

Hensel Phelps Construction Company – Chantilly, Virginia

Design Architect:

Skidmore, Owings & Merrill (SOM) – Chicago, Illinois

Architect of Record:

Corgan Associates, Inc. – Dallas, TX

GeoTechnical Engineer:

GeoConcepts Engineering, Inc. – Ashburn, Virginia

Civil/Landscape:

Timmons Group – Richmond, Virginia

Structural:

Thornton Tomasetti, Inc. – Washington, DC

MEP:

KTA Group Inc. – Herndon, Virginia

Mechanical:

Southland Industries – Dulles, Virginia

Electrical:

M.C. Dean – Dulles, Virginia

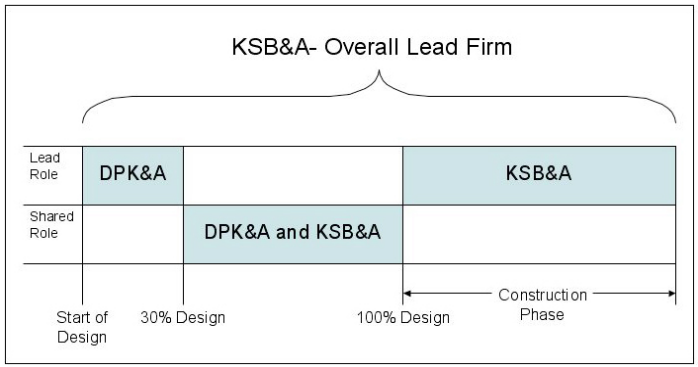
Security:

ARA Security – Alexandria, Virginia

Fire Protection / Life Safety:

Rolf Jensen & Associates, Inc. – Fairfax, Virginia

ERIE CH COMPLEX, ERIE, PA



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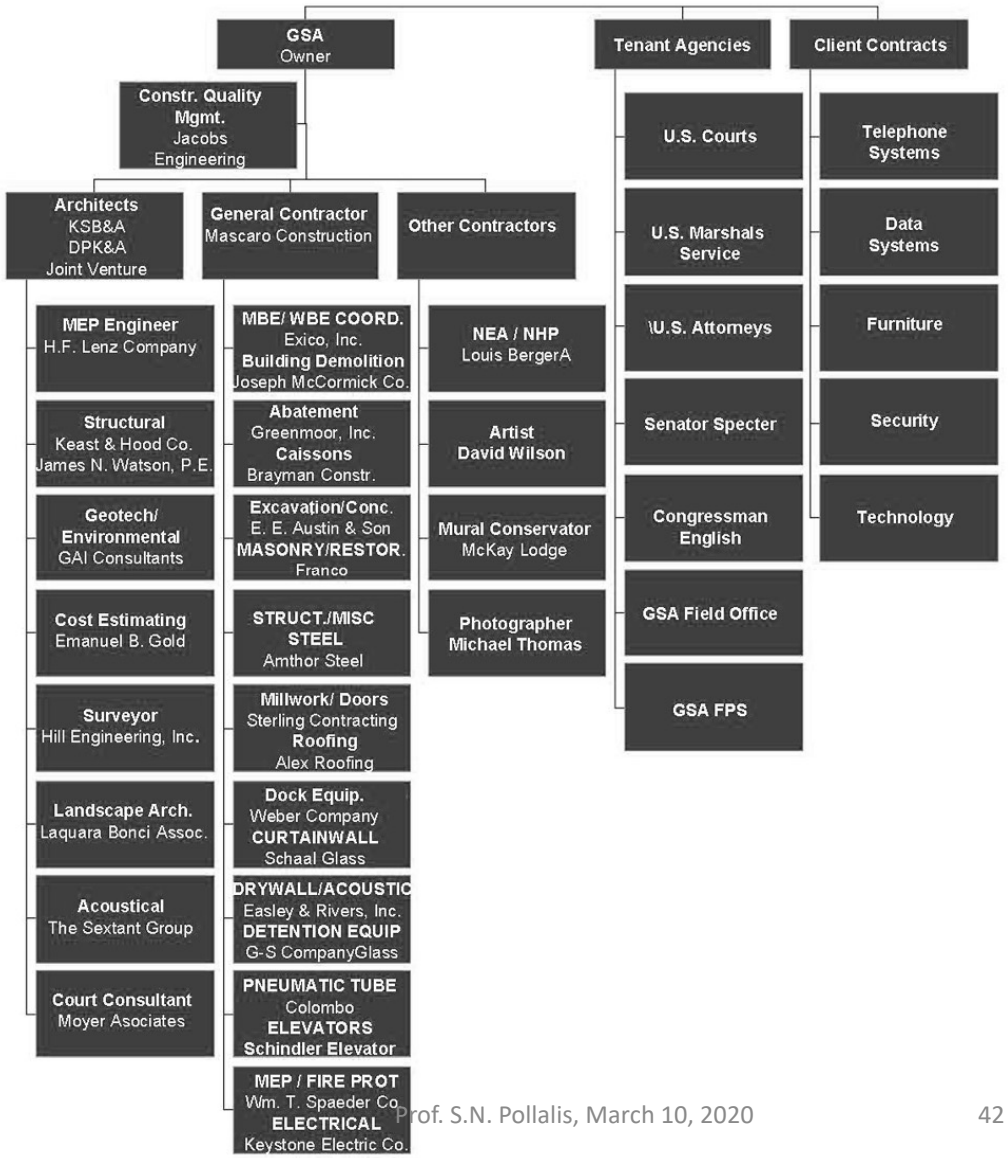
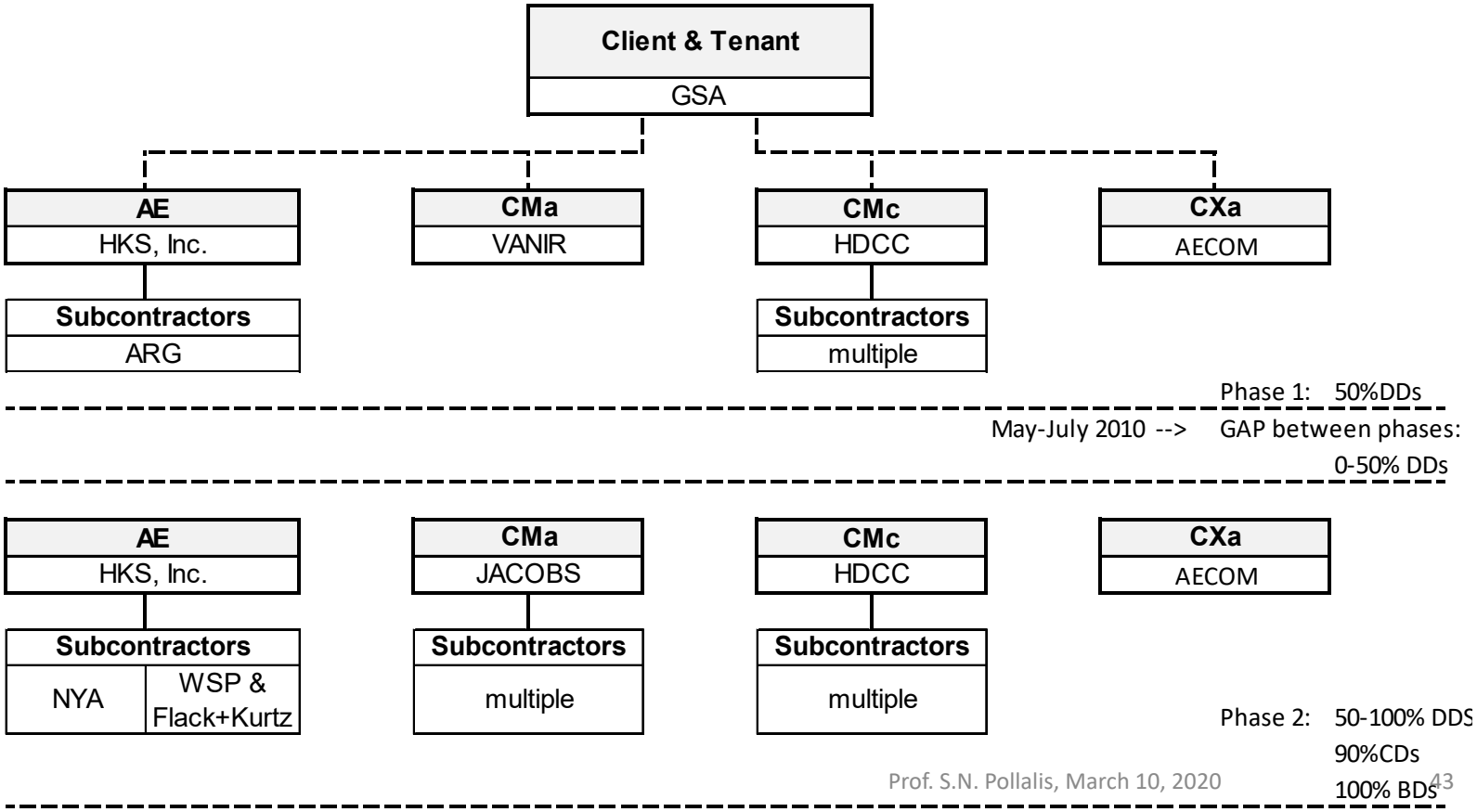


50 UNP, San Francisco, CA



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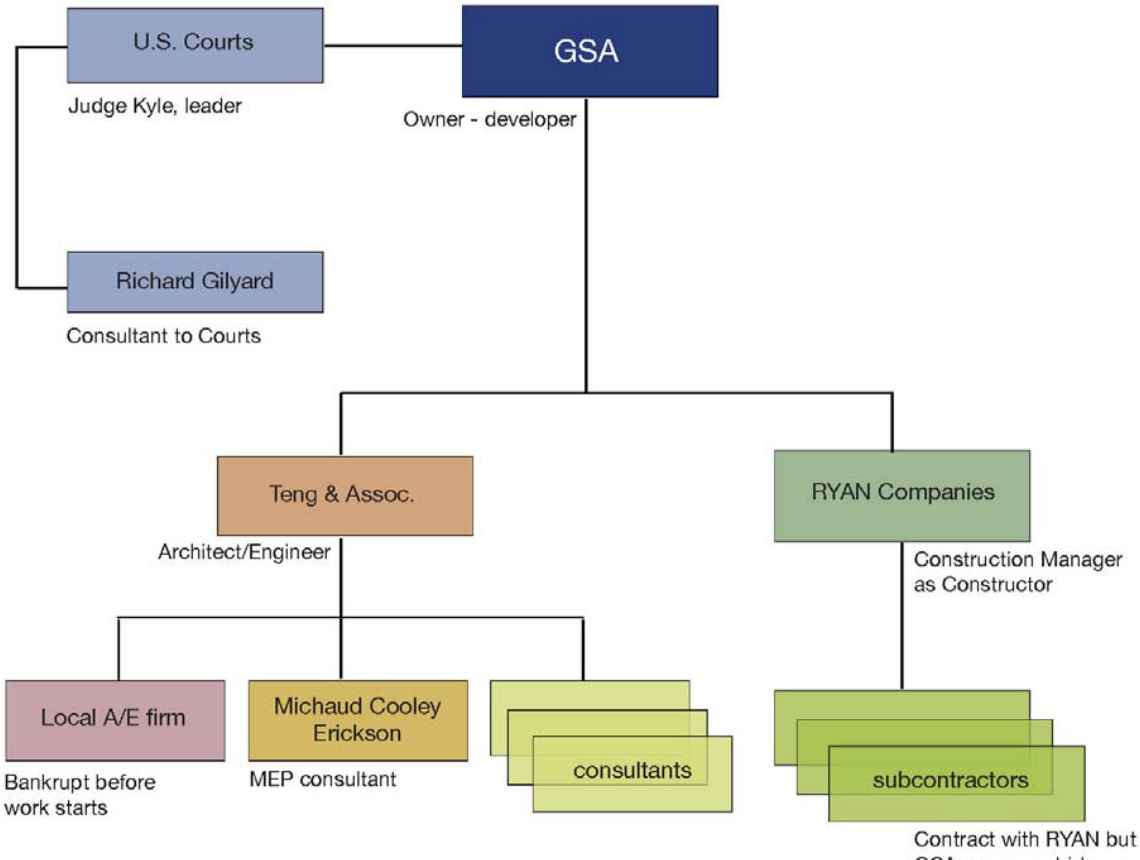
Warren E. Burger FB&CH, Saint Paul, MN



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1800 F

Client & Owner
GSA

Tenant Representatives (TR)	GSA Project Manager	Communications Change Manager
1. Kristi Williams Tunstall 2. Rob Stafford	Dean Smith	Change Champions

Architect Engineer (AE)
Shalom Baranes Associates

D/B contractor
Whiting-Turner/Walsh, JV

Main Subcontractors			
Structural Engineer	Interior Architect of Record	Construction Manager (CM)	M/E/P Systems Engineer
Thornton-Tomasetti Group	M. Arthur Gensler, Jr. & Associates	Heery International, Inc	The Kirlin Group

Main Subcontractors	
Smart Occupancy Technology	Smart Building Technology
AgilQuest	Integrated Building Solutions (IBS)

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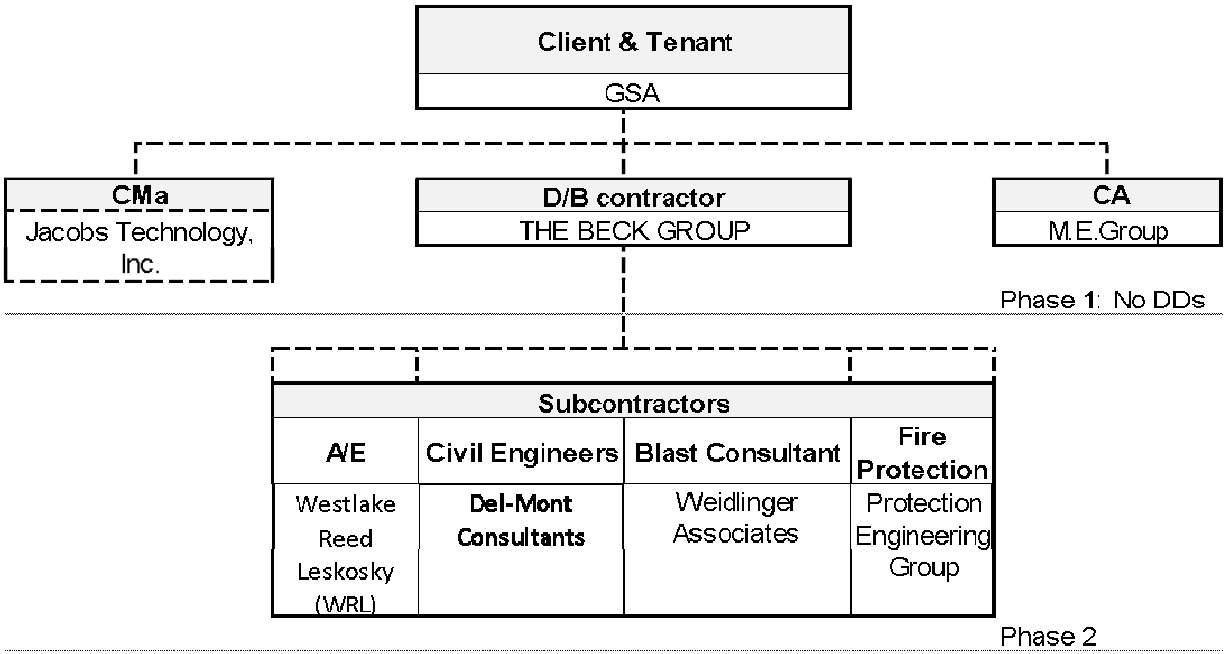
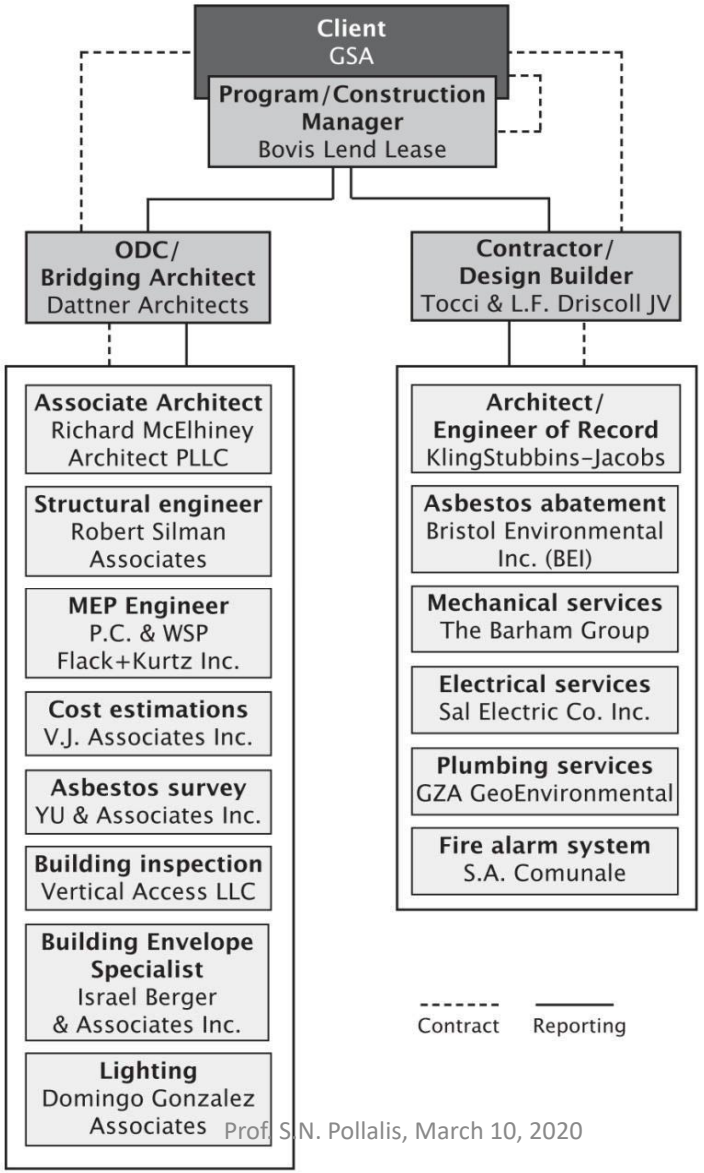
Aspinall FB&CH, Grand Junction, CO



RODINO JR. FB
NEWARK, NJ



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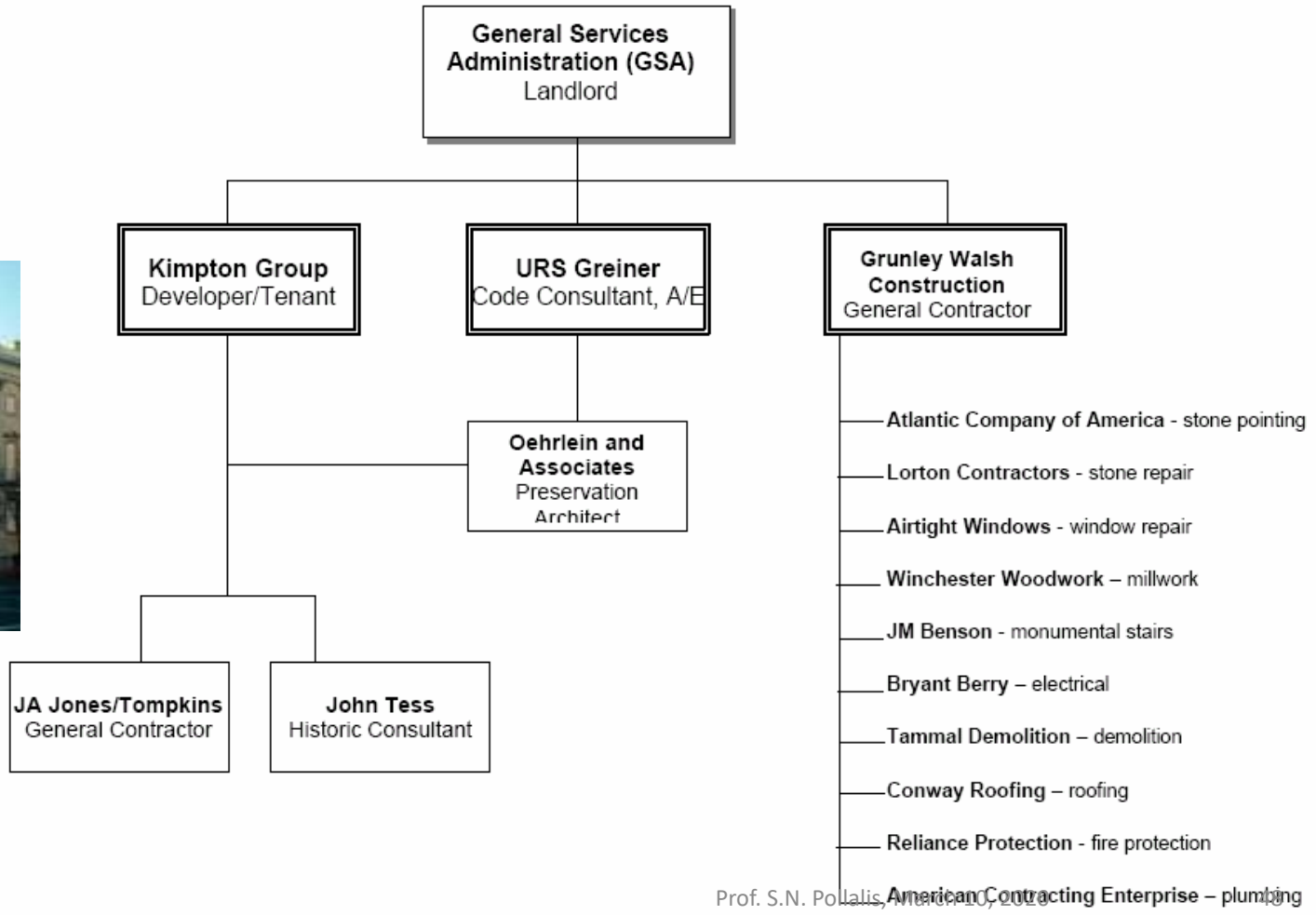
TARIFF BUILDING, WASHINGTON, DC
HOTEL MONACO



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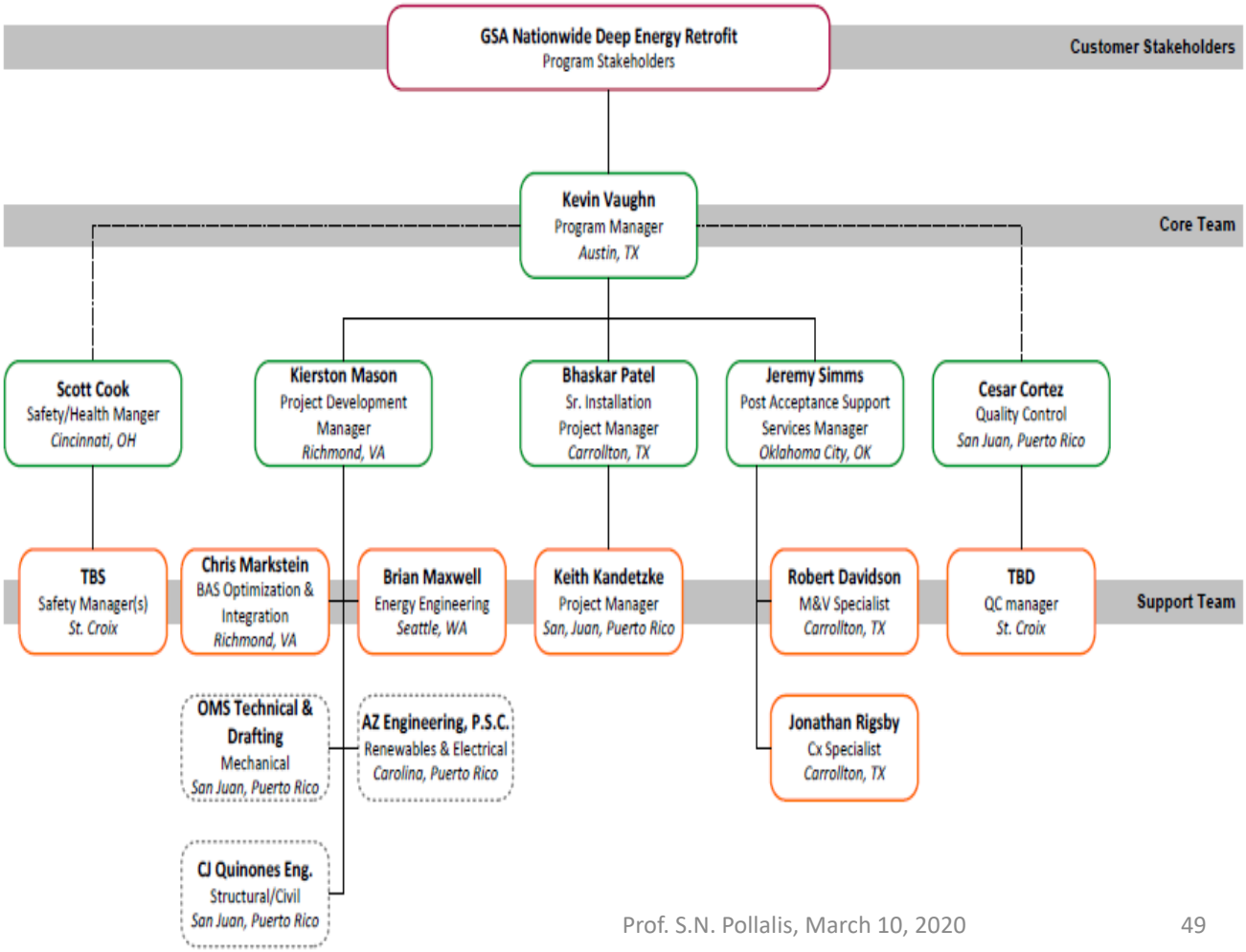
ALMERIC L. CHRISTIAN FB&CH



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