

Dream Team

Assembling the Ultimate Project Team

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Presentation Objectives

- Who are the key players on a project team?
- How can each member bring value?
- What are construction delivery options & which is right for your project?
- What selection procedures will ensure the best outcome?



Presentation Outline

- I. Team Building Process
- II. Project Team
- III. Team Selection
- IV. Project Examples
- V. Summary

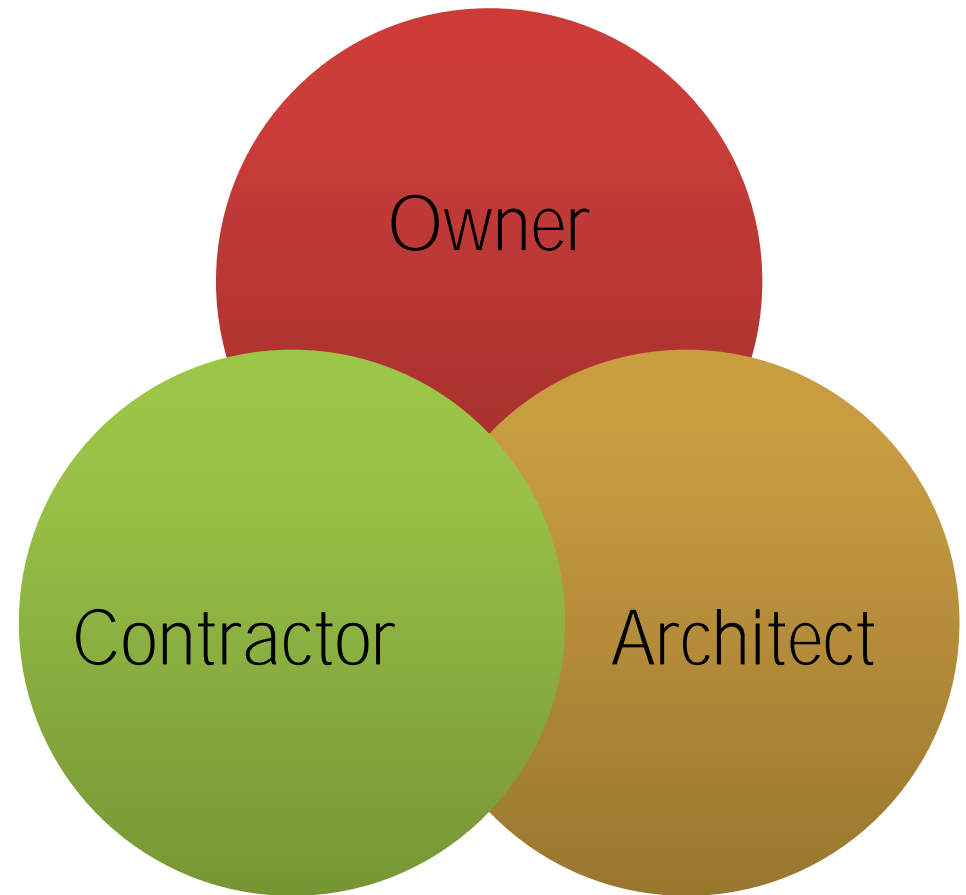


Part I

Team Building Process

Primary Roles

- Owner
 - Selection of project team
 - Project funding
 - Operations
- Architect
 - Planning
 - Design
 - Specifications
- Contractor
 - Cost and scheduling
 - Execution



Team Building Process

- Step-by-step process
- Roles and responsibilities vary
- Team members join project at different stages
- Build team along the project timeline



Project Phases



Master
Planning



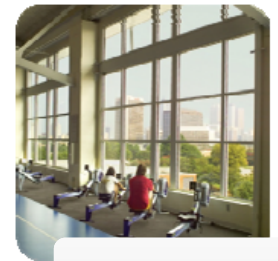
Pre-Design



Design



Construction



Occupancy

Primary Project Team



Owner					
Owner's Rep					
Architect					
Master Planner					
Space Programmer					
Operations Consultant					
Core Consultants					
Specialty Consultants					
Constructor					

The Team and You

- Where do you fit on the team?
- Your role on the team
- Who is on the team?
- Who selects the team?
- How to enhance your position



Owner – Project Champion

- Strong Project Advocate
- Leadership Position
 - Mayor
 - College President
 - Respected Figure
- Networked Communicator
- Consensus Builder
- Fundraising Ability



Owner – Steering Committee

- Major Decision Making Body
- Project Visionaries
- Project Leadership
- Milestone Review Committee
- Participation For Life Of Project
- Final Approval Body
- AKA
 - Executive Committee
 - Core Committee
 - Leadership Committee



Owner – Steering Committee

MUNICIPAL
Mayor
City Manager
City Attorney
City Council Rep
Citizen Representative
Parks/Recreation Director
Park Board Rep
Public Works Director
City Planner

HIGHER ED
President
VP Business
VP Student Affairs
VP Advancement
Student Representative
Athletics Director
Recreation Director
Director Of Facilities
Campus Architect

Owner – Working Committee

- Day-To-Day Review Committee
- Interface With Professional Team
- Project Expertise
- Some Overlap With Steering Committee
- Participation For Life Of Project
- Steering Committee Liaisons

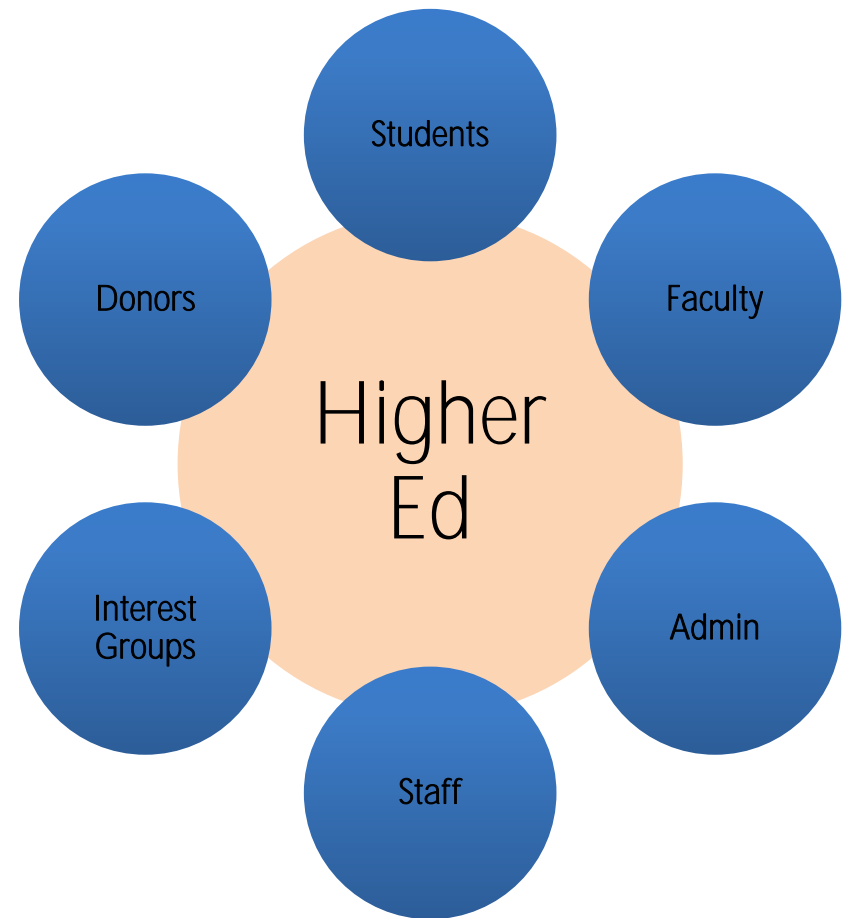


Owner – Working Committee

MUNICIPAL
City Manager
Parks/Recreation Director
Program Coordinator
Fitness Director
Aquatics Director
Public Works Director
Head Of Maintenance
City Planner

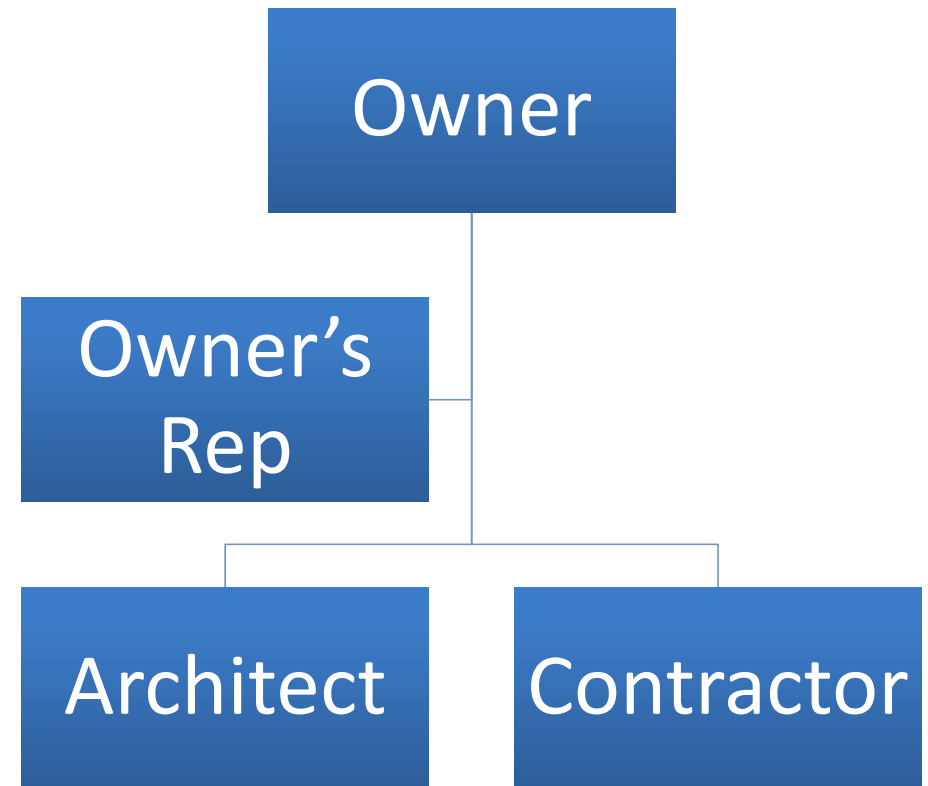
HIGHER ED
Recreation Director
Athletics Director
Fitness Director
Aquatics Director
Intramural Sport Director
Outdoor Program Director
Head Of Maintenance
Campus Architect

Owner – Project Stakeholders



Owner – Owner's Rep

- Primary point of contact
- Can be an outside consultant
- Authorized decision maker
- Dedicated for duration of project
- Familiar with institution
- Experience with building projects
- Understands specific project type
- Should provide value to the project



Questions?



Part II

Project Team

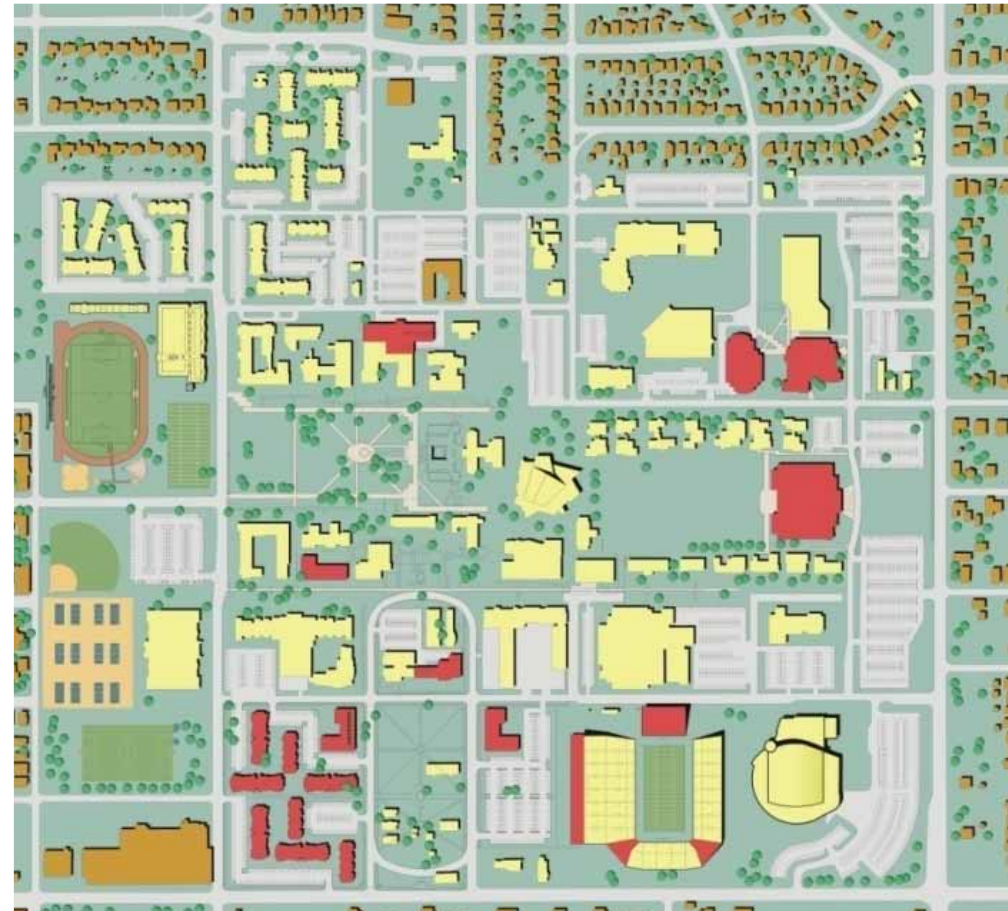
Primary Project Team



Owner					
Owner's Rep					
Architect					
Master Planner					
Space Programmer					
Operations Consultant					
Core Consultants					
Specialty Consultants					
Constructor					

Master Planner

- Long-range vision
- Physical development
 - Building placement
 - Pedestrian paths
 - Vehicular circulation
 - Parking
 - Landscaping
- Planning tool
- Design standards
- May be Architect



Programmer

- Establish space needs
- Methodology
 - Focus groups
 - Formal survey
 - National standards
 - Peer comparison
 - Professional judgment
- Demand based empirical analysis
- Preliminary cost basis
- Technical requirements
- Adjacencies

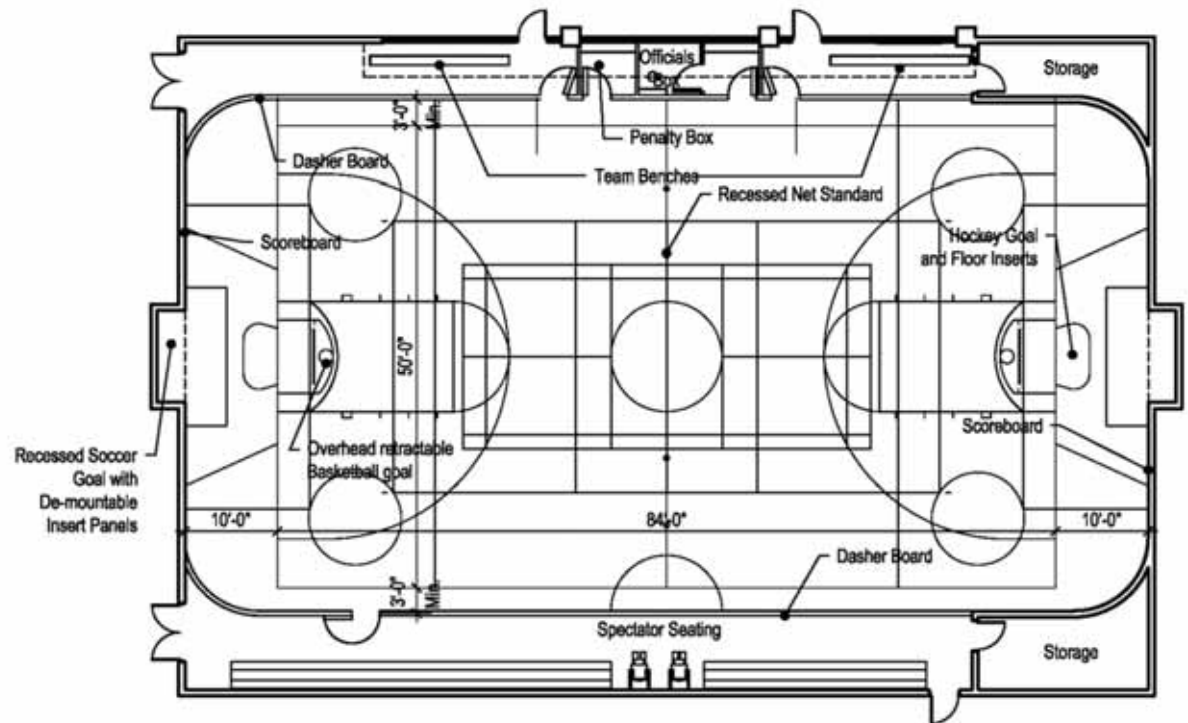
NO.	COMPONENT TYPE	QUANTITY	UNIT SF	TOTAL SF
1.00	ACTIVITY SPACE			44,961 SF
1.01	GYMNASIUM (3 COURT)	1 ROOM	18,500 SF	18,500 SF
1.02	GYMNASIUM STORAGE	2 ROOMS	300 SF	600 SF
1.03	SUSPENDED RUNNING TRACK	1 TRACK	5,367 SF	5,367 SF
1.04	RACQUETBALL COURT	2 COURTS	800 SF	1,600 SF
1.05	CLIMBING WALL	1 AREA	397 SF	397 SF
1.06	BOULDERING WALL	1 AREA	260 SF	260 SF
1.07	CLIMBING WALL OFFICE	1 ROOM	117 SF	117 SF
1.08	CIRCUIT & FREE WEIGHTS	2 AREAS	3,500 SF	7,000 SF
1.09	CIRCUIT & FREE WEIGHT STORAGE	1 ROOM	300 SF	300 SF
1.10	CARDIO & STRETCHING	1 AREA	4,216 SF	4,216 SF
1.11	MP ROOM - LARGE	1 ROOM	2,531 SF	2,531 SF
1.12	MP ROOMS STORAGE	1 ROOM	395 SF	395 SF
1.13	MP ROOM - SMALL	1 ROOM	2,283 SF	2,283 SF
1.14	MP ROOMS STORAGE	1 ROOM	242 SF	242 SF
1.15	QUIET FITNESS AREA	1 AREA	1,153 SF	1,153 SF

NET BUILDING AREA	75%	80,119 SF
CIRCULATION AND WALLS	25%	26,706 SF
GROSS BUILDING AREA		106,825 SF

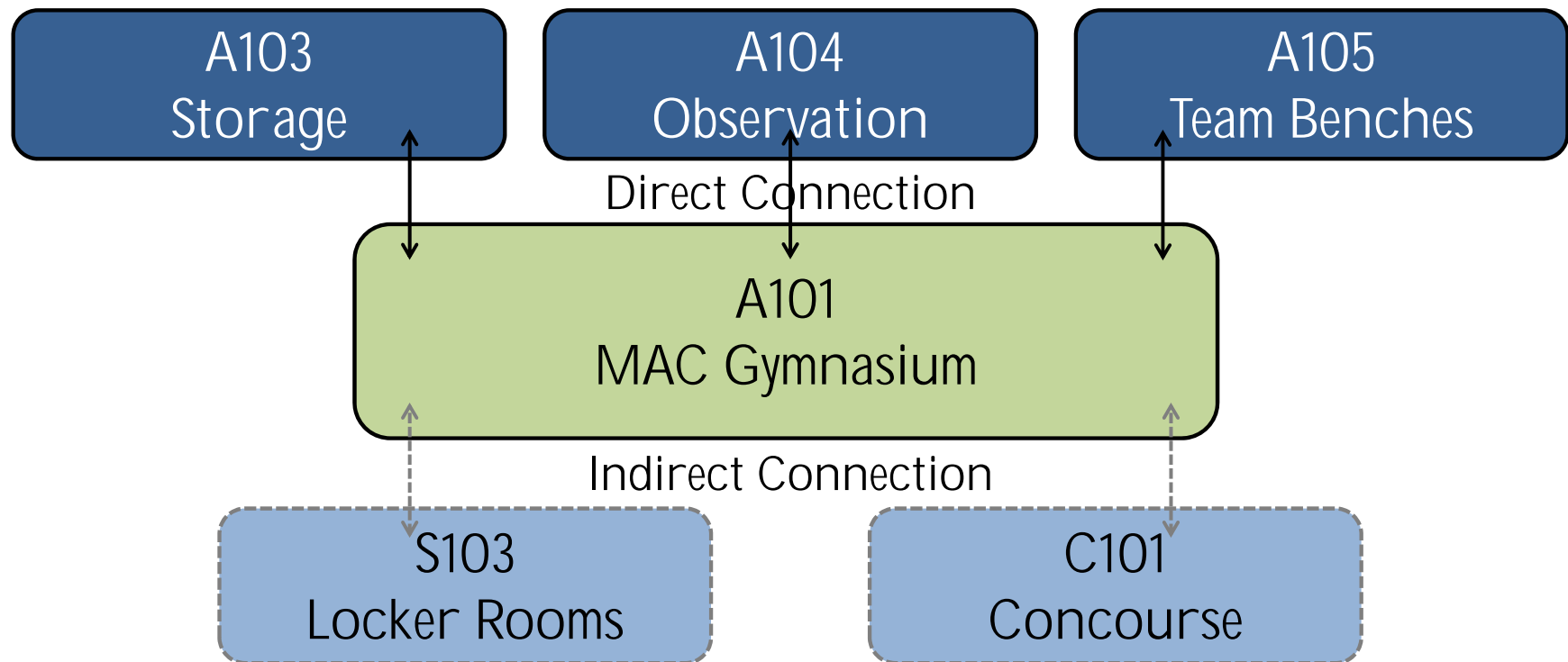
Programmer

B103 MAC GYMNASIUM - 84' COURT AREA: 7,200 ISF

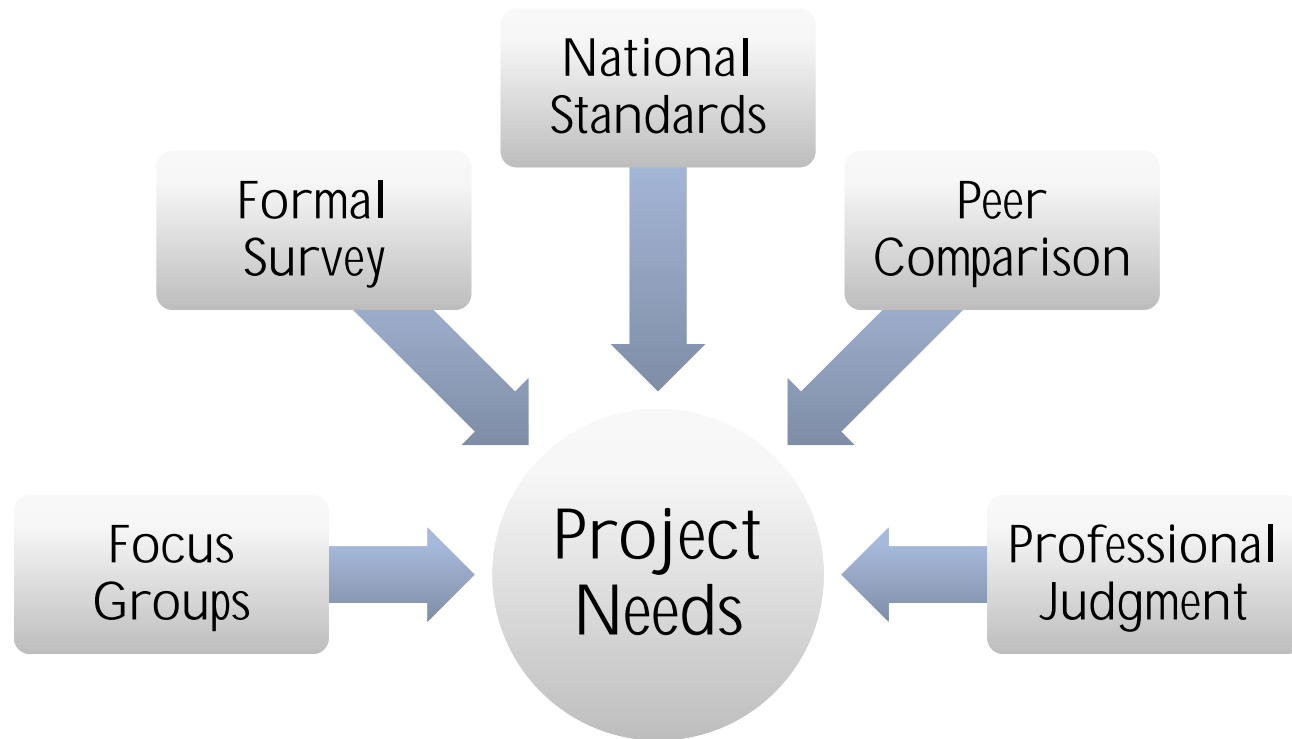
- Occupants:** To be determined based on code requirements
- Function:** Multi-purpose court for indoor soccer, hockey, basketball, volleyball, etc.
- Adjacency:** Spectator / Athlete Seating / Boxes
MAC Gymnasium Storage
- Environment:**
- Floor:** Synthetic floor
 - Walls:** CMU or gypsum board above 18'
 - Ceiling:** Exposed structure, acoustical deck; 25' height minimum
 - Windows:** Exterior windows
 - Doors:** 3' x 7' wood doors
- Equipment:** 2 power operated retractable basketball backboards, Floor sleeves for volleyball net standards, wall mounted Scoreboards, protected clocks, dasherboard system
- Furnishings:** Volleyball / badminton nets and standards
- Mechanical:** Dedicated HVAC zone
- Electrical:** Duplex electrical outlets per code, power/data for backboards, scoreboards
HID or LED lighting
- Notes:** Provide rounded corners and fixed, recessed goals 12' wide, netting to keep balls in play
See Section 3D Electrical for media and AV requirements



Programmer



Programmer



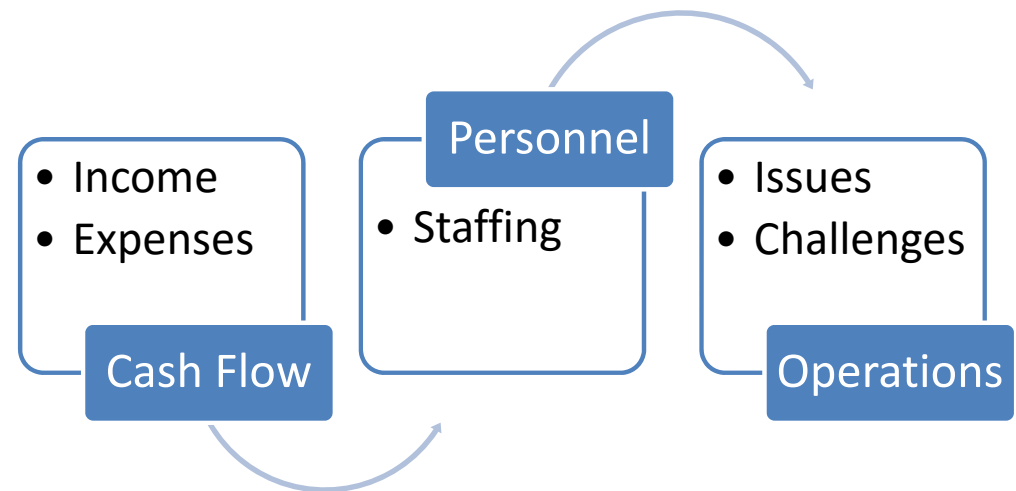
Conceptual Designer

- Visualization of program
- Organization of space
- Functional relationships
 - Site plan
 - Floor plan
 - Exterior concept
- Cost estimate
- Fundraising tool



Operations Analyst

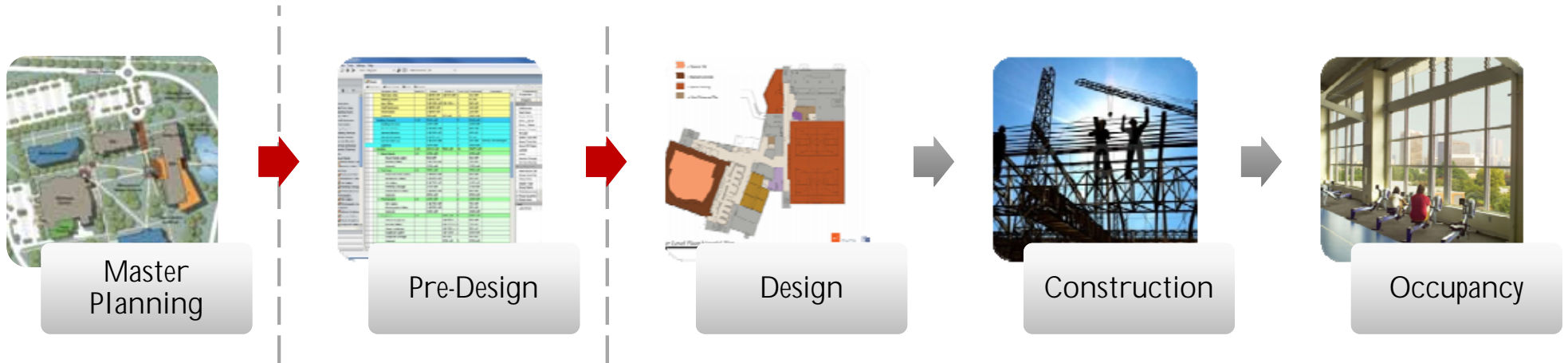
- Project operating costs
- Cash flow analysis
 - Revenue
 - Expenses
- Personnel needs
- Operations issues



Operations Analyst

CASH FLOW SUMMARY		
REVENUE		
Fees	\$2,500,000	
Daily Admission	\$500,000	
Special Event Rentals	\$250,000	
Miscellaneous	\$50,000	
Total Revenue		\$3,300,000
EXPENDITURES		
Personnel	\$1,000,000	
Operations	\$1,500,000	
Maintenance	\$500,000	
Miscellaneous	\$100,000	
Total Expenditures		\$3,100,000
DIFFERENCE		\$200,000

Project Transition



Project Transition

- Can be extended period
 - Project promotion
 - Fundraising
- Project team may change
- Continuity is critical
- Address changes
 - Validate original goals
 - Price escalation
- Update if necessary



Master
Planning



Pre-Design



Design

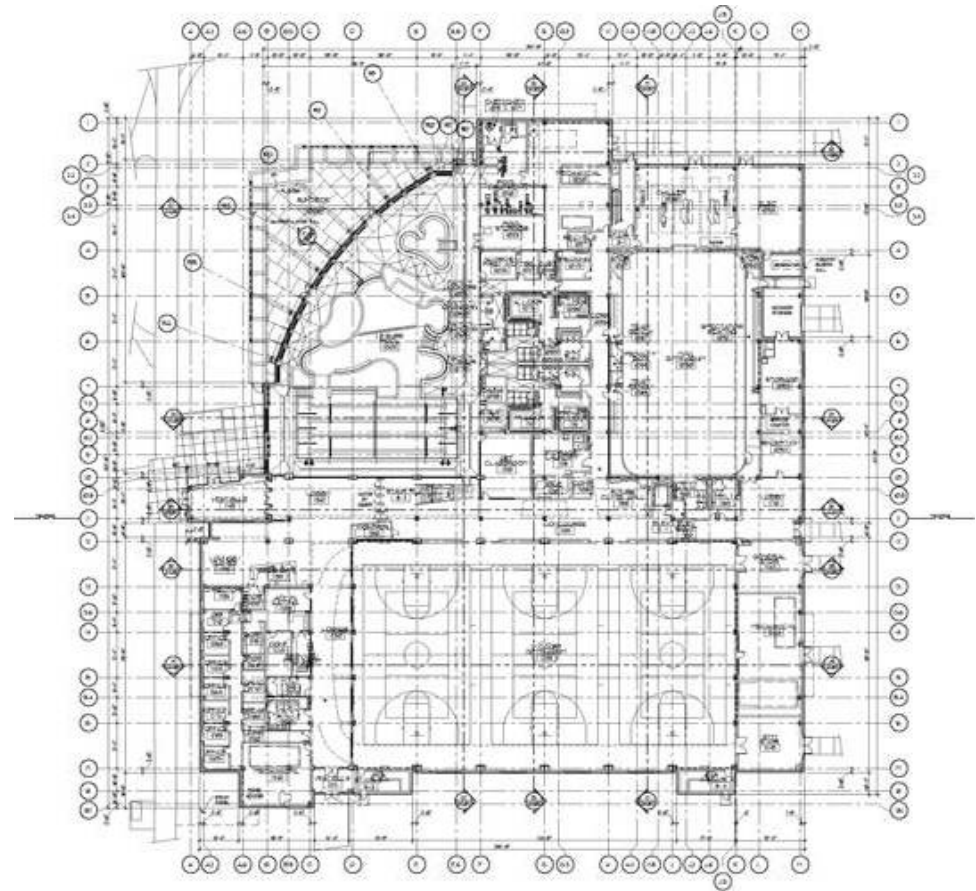
Primary Project Team



Owner					
Owner's Rep					
Architect					
Master Planner					
Space Programmer					
Operations Consultant					
Core Consultants					
Specialty Consultants					
Constructor					

Architect

- Design team leader
- Coordinator of all specialist
- Architectural design
 - Site development
 - Plan organization
 - Exterior Image
- Construction coordination and administration



Core Consultants

- Engineers

Civil

Structural

Mechanical

Electrical

Plumbing

Fire protection



Third Party & Specialty Consultants

Retained by Owner

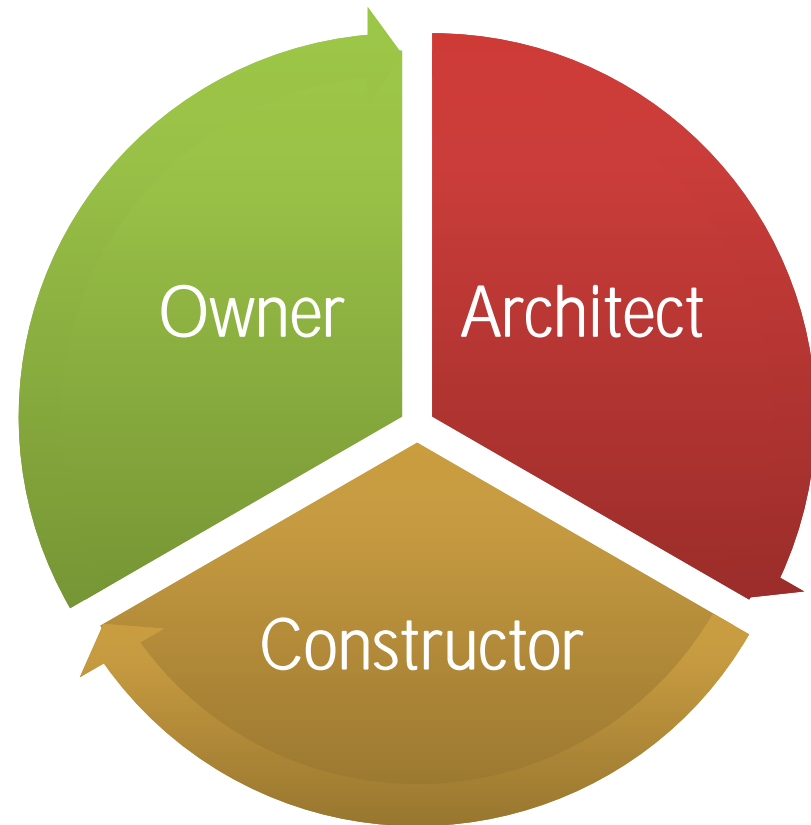
- Property surveyor
- Geotechnical engineer
- Construction materials testing
- Hazardous material abatement
- Systems commissioning (LEED)

Design Team

- Aquatics
- Audio-visual/multi-media
- Acoustics
- Security
- Cost estimating
- Landscaping
- Sustainability (LEED)
- Furnishings
- Signage/graphics
- Exhibit/display
- Code/life safety

Constructor

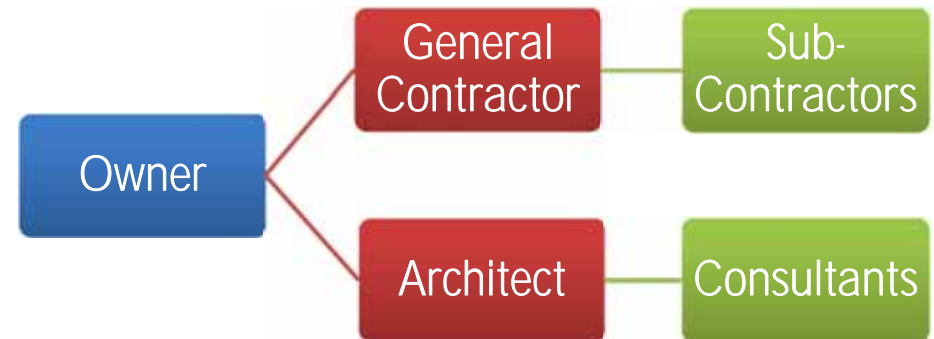
- Collaborative partnership
- Design/Bid/Build
- Construction manager
 - Agent
 - At-Risk
- Design-Build





General Contractor

- Traditional role of constructor
- Selection opportunities
 - Public bid
 - Pre-qualified bid list
- Single source
- Bonded GMP proposal



General Contractor

■ Pros

- Time-tested familiar method
- Selection options available
- Generally lowest construction cost

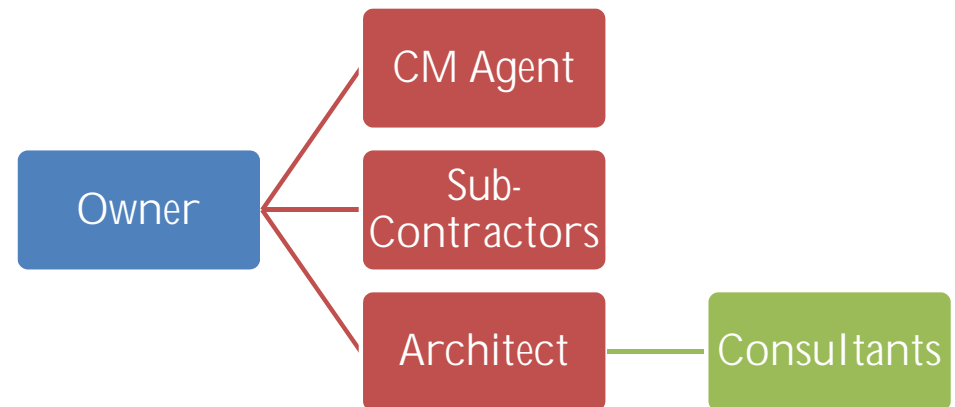
■ Cons

- Cost not known until bid day
- Potentially combative relationship
- Change orders



Construction Manager

- At-risk
 - GMP (Guaranteed Maximum Price)
- Agent
 - Acts as agent for Owner
 - Coordinates pricing, bidding, construction



Construction Manager

■ Pros

- Pre-construction expertise
- Architect works for owner
- Can reduce conflicts and errors
- CM cost estimating & scheduling expertise

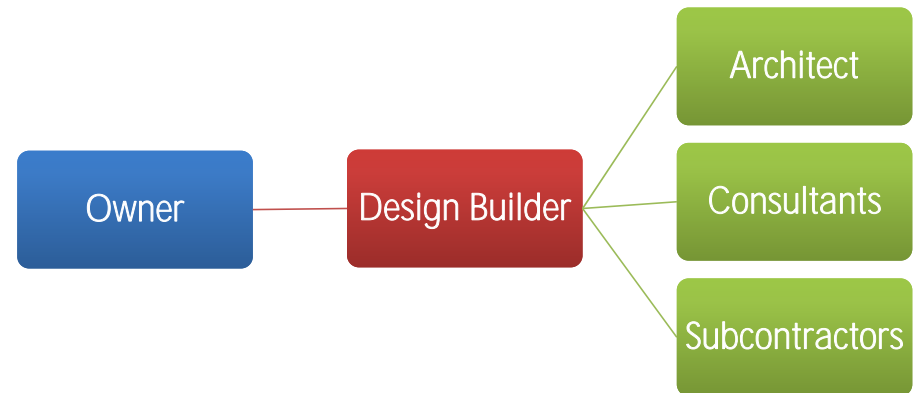


■ Cons

- Cost is inflated because of risk
- CM fees add to cost
- Design fees higher from bid packages
- GMP not guaranteed
- Potentially adversarial
- Change orders

Design-Build

- One entity
 - Design
 - Construction
- Single source responsibility
- One owner contract



Design-Build

■ Pros

- Single point of responsibility
- Paper work reduced
- Fastest project delivery method
- Works well for familiar solutions

■ Cons

- Loss of owner control
- Architect does not serve owner
- No checks & balances
- Potential for unexpected results
- Not for committees
- Change orders

Project Transition



Owner					
Owner's Rep					
Architect					
Master Planner					
Space Programmer					
Operations Consultant					
Core Consultants					
Specialty Consultants					
Constructor					

Transition Committee

- Project operation
 - Staffing
 - Operating plan analysis
- Policy/procedure review
 - Adapt to new facility
 - Emergency action plan
- Internal communication
- Move-in
 - Furniture and equipment
- Project promotion
- Dress rehearsal/soft opening
 - Prepare for changes
 - Contingency plan
 - Unforeseen circumstances
- Line item in budget
- Grand opening

Questions?



Part III

Team Selection

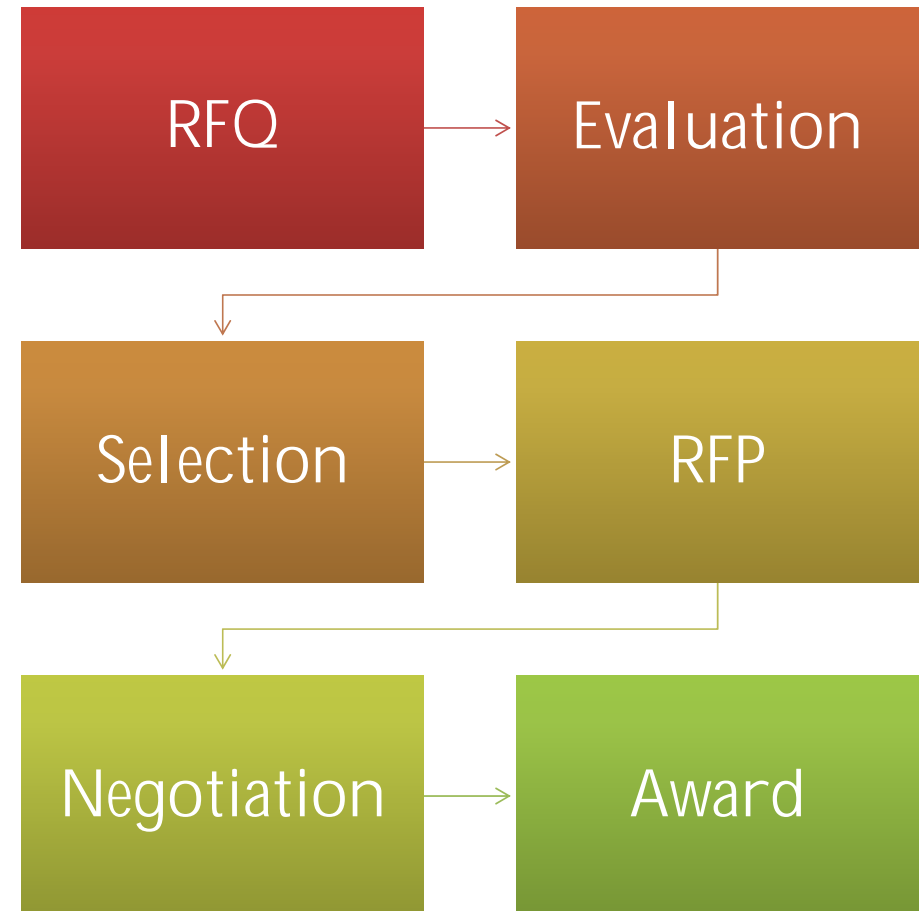
Team Selection

- Leap of Faith
- New experience for all involved
 - Owner
 - Architect
 - Contractor
- Major long-term investment
- You will live with the results
- There is no 'Wait Until Next Year'



Team Selection

- Request For Qualifications (RFQ)
 - Experience and expertise
- Evaluation
 - Due diligence
 - Reference check
- Selection
- Request For Proposal (RFP)
 - Structured interview
- Negotiate
 - Verify scope and value
- Award Contract



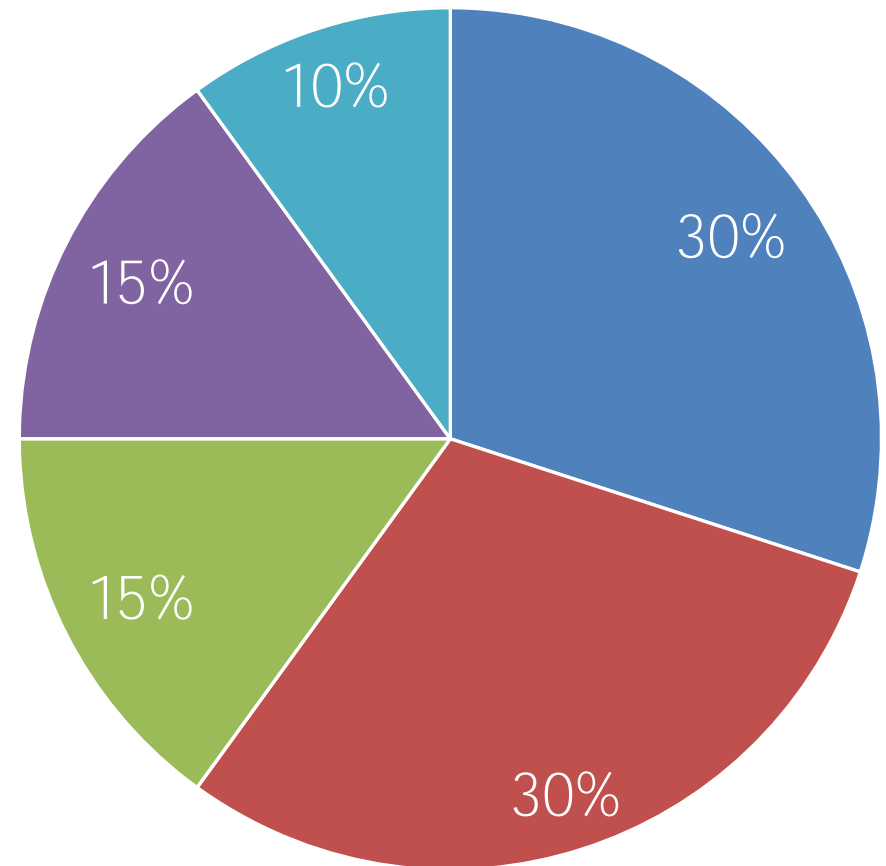
Hiring Metrics

- 1998 study (Frank Schmidt and John Hunter)
- Based on 85 years of research
- Use structured interviews
- Avoid unstructured interviews
- ‘Confirmation Bias’
Confirmation of first impression

Metric	Predictor of Performance
GMA (General Mental Ability)	51%
Structured interview	51%
Job knowledge tests	48%
Integrity tests	41%
Unstructured interview	38%
Assessment centers	37%
Biographical data	35%
Conscientiousness tests	31%
Reference checks	26%
Job experience (years)	18%
Years of education	10%
Interests	10%
Graphology	2%
Age	-1%

Team Evaluation

- Relevant experience (30%)
 - Architect & Consultants
- Team experience (30%)
 - Individual roles & responsibilities
- Process/project approach (15%)
 - Communication
 - Schedule
 - Cost control
- Response to specific issues (15%)
 - Unique project challenges
- Intangibles (10%)



Team Evaluation Sheet

- Key part of structured interview
- Unique to your project
- Reflects priorities of your organization
- Clearly defined grading scale
- Must be completed by all voting members

	Excellent 5	Very Good 4	Good 3	Fair 2	Poor 1	
Relevant Experience						30%
Sufficient quantity of projects						
Project quality						
Project relevance						
Sub Total						<input type="text"/>
Personnel Qualifications						30%
Principal-In-Charge						
Project Manager						
Project Architect						
Specialty Consultants						
Sub Total						<input type="text"/>
Process/Project Approach						15%
Comprehensive						
Innovative/creative						
Appropriate for this project						
Communication						
Schedule						
Cost control						
Sub Total						<input type="text"/>
Response to Specific Issues						15%
Complete						
Unique						
Sub Total						<input type="text"/>
Intangibles						10%
Chemistry						
Presentation						
Sub Total						<input type="text"/>

Online Survey

- Direct e-mail
- NIRSA Community Newsletter
- Questions + Comments
- Results converted to 100 point scale
- Participants
 - 60+ respondents
 - Experience with multiple projects (78%)
 - 50% of projects were \$20M+
- Detailed results available
www.hastingschivetta.com

1. Tell us about yourself:

Position/Title:

Years of experience:

2. Tell us about your design and construction project experience:

A. How many separate projects?

- ☐ 1
- ☐ 2 - 4
- ☐ 5 +

B. What type (check all that apply)?

- ☐ Renovation
- ☐ Addition
- ☐ New stand-alone structure

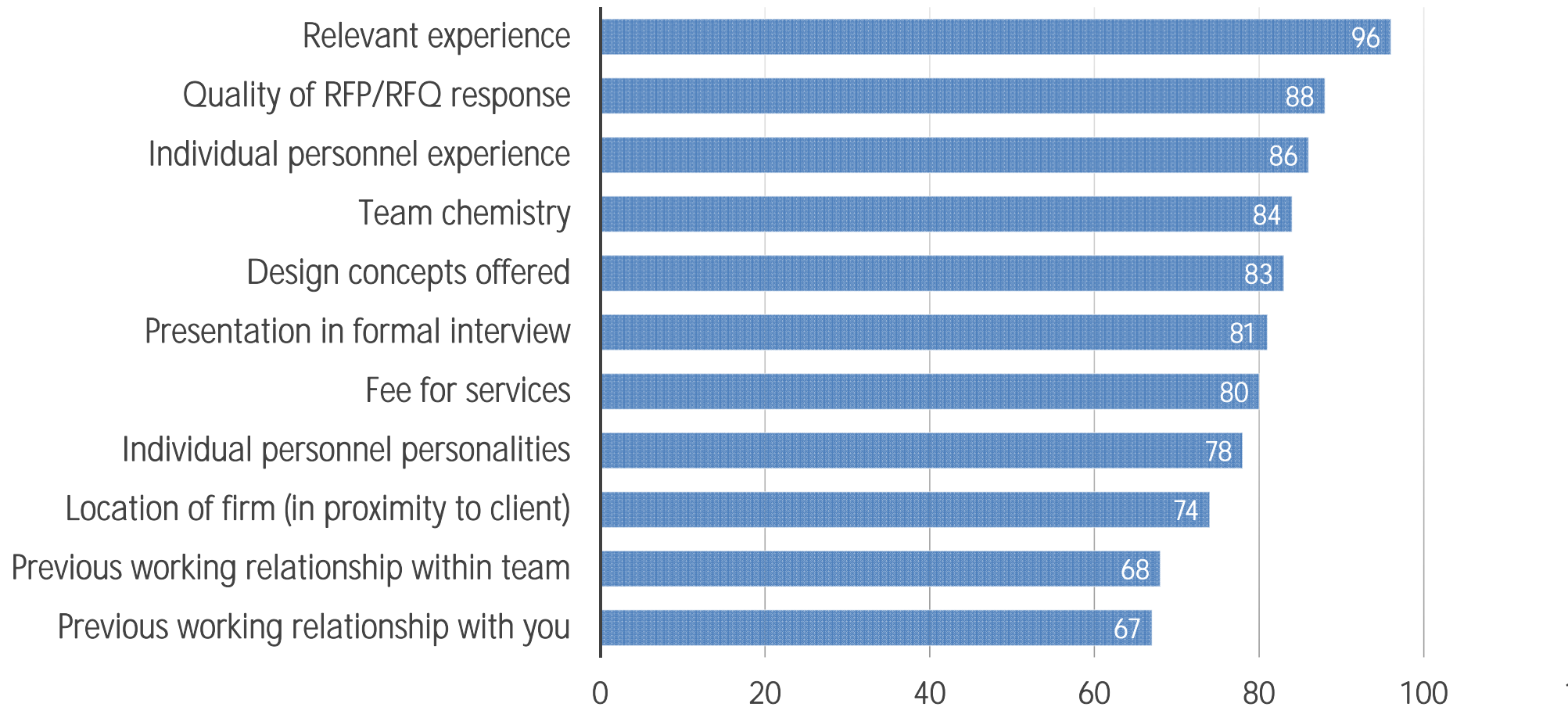
C. What was the approximate value of the largest project?

- ☐ < \$5M
- ☐ \$5-10M
- ☐ \$10-20M
- ☐ > \$20M

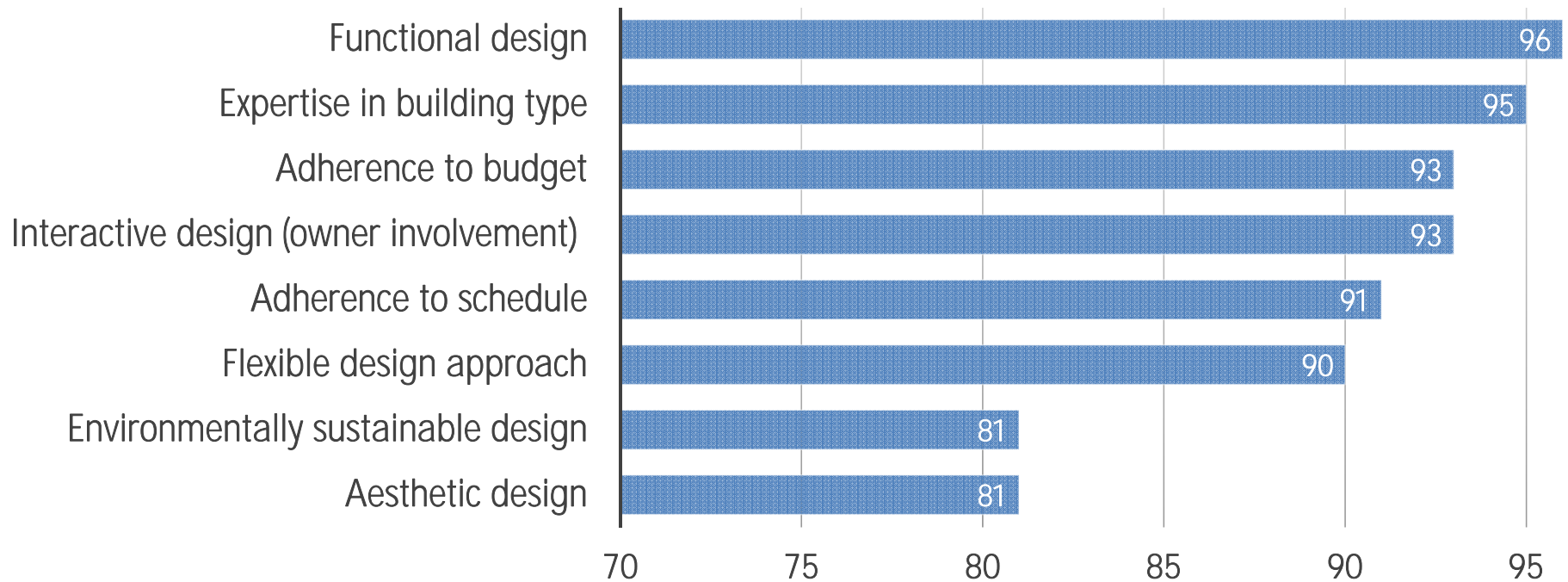
3. Indicate the importance of the following design team (architects/engineers/consultants) qualifications during the selection process:

	Very Important ←→ Not Important				
	5	4	3	2	1
Quality of RFP/RFQ submission					
Firm experience/expertise in specific building type					
Individual personnel experience/expertise					
Individual personnel personalities					
Diversity of team personnel (gender, ethnicity, etc.)					
Team chemistry					
Location of firm (in proximity to client)					
Design concepts offered (prior to selection)					
Fee for services					
Previous working relationship with you					
Previous working relationship within design team					
Presentation in formal interview					
Other (please indicate):					

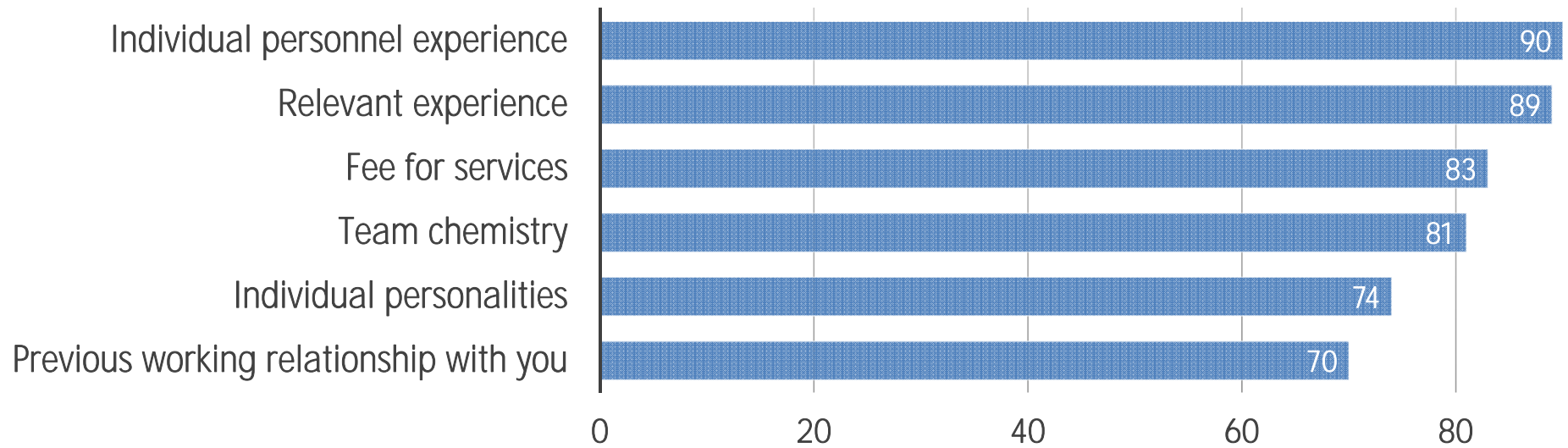
Survey Results – Design Team Selection



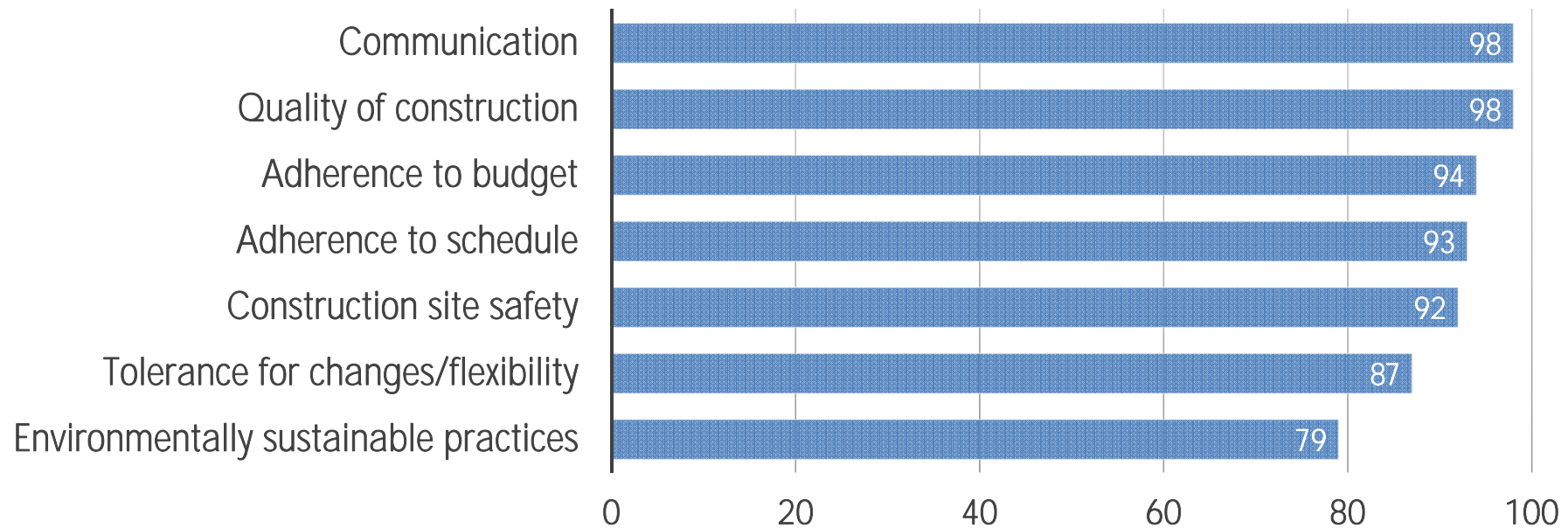
Survey Results – Design Team Performance



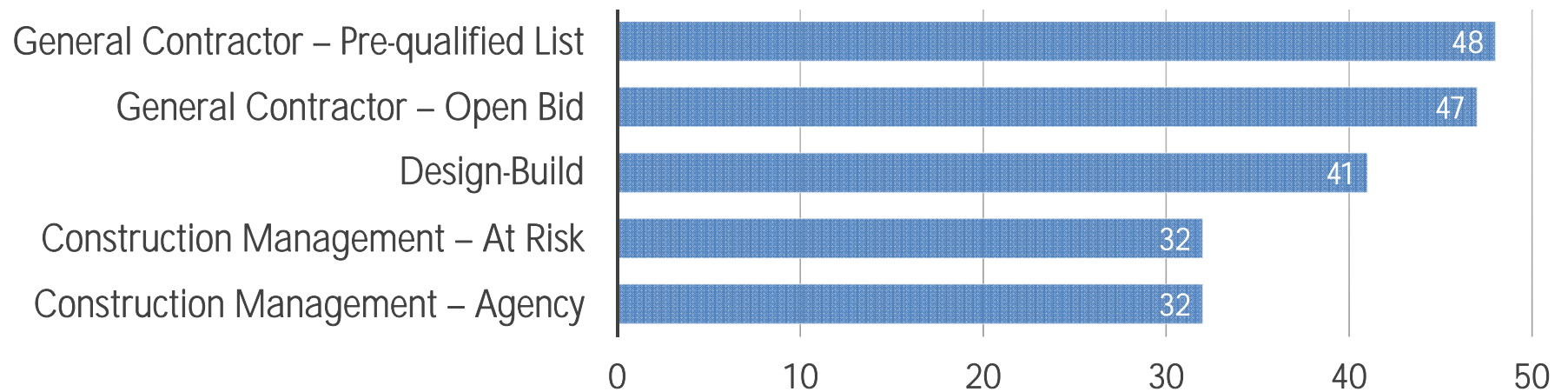
Survey Results – Contractor Selection



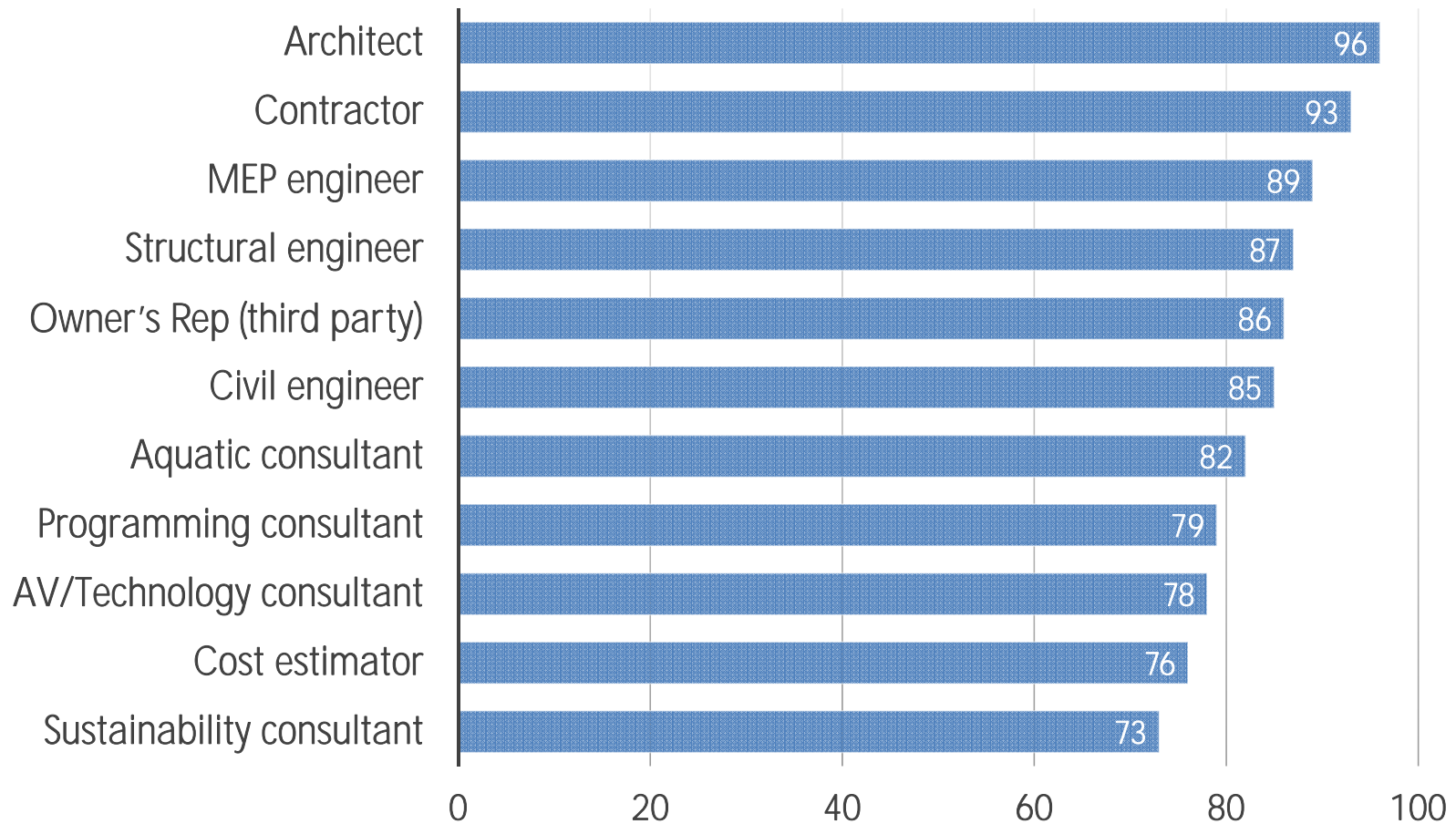
Survey Results – Construction Team Performance



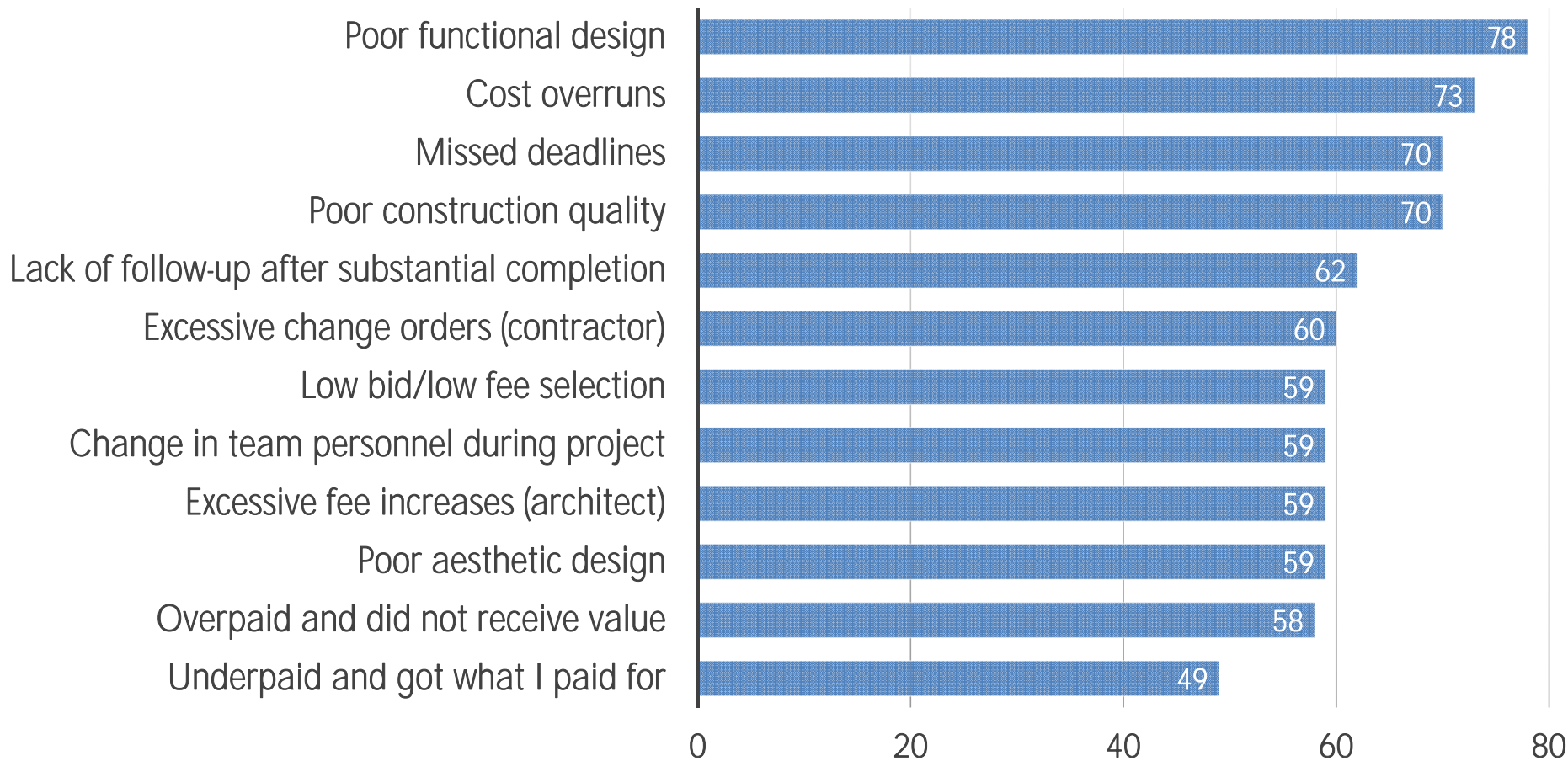
Survey Results – Construction Delivery



Survey Results – Team Member Value



Survey Results – Problematic Design & Construction Issues



Questions?

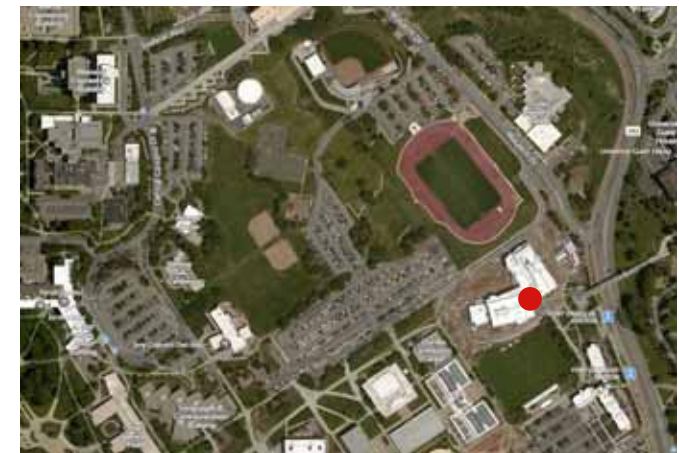


Part IV

Project Examples

University of Utah - George S. Eccles Student Life Center

- Salt Lake City Utah
- Enrollment = 32,061
 - 13% of Undergrads live on campus
- NCAA D-I; pac 12 conference
- Student fee funded
- 15% private donation requirement
- Fully staffed facilities department
- Full service recreation department
- Antiquated existing facility



University of Utah - George S. Eccles Student Life Center

- Programming phase complete
- 185,000 SF
- \$41,400,00
- 50m pool, leisure pool, whirlpool
- Fitness center
- Three court gym
- MAC gym
- Track
- Racquetball courts
- Group fitness studios



Entry Level



Second Level



Third Level



Lower Level

University of Utah – George S. Eccles Student Life Center



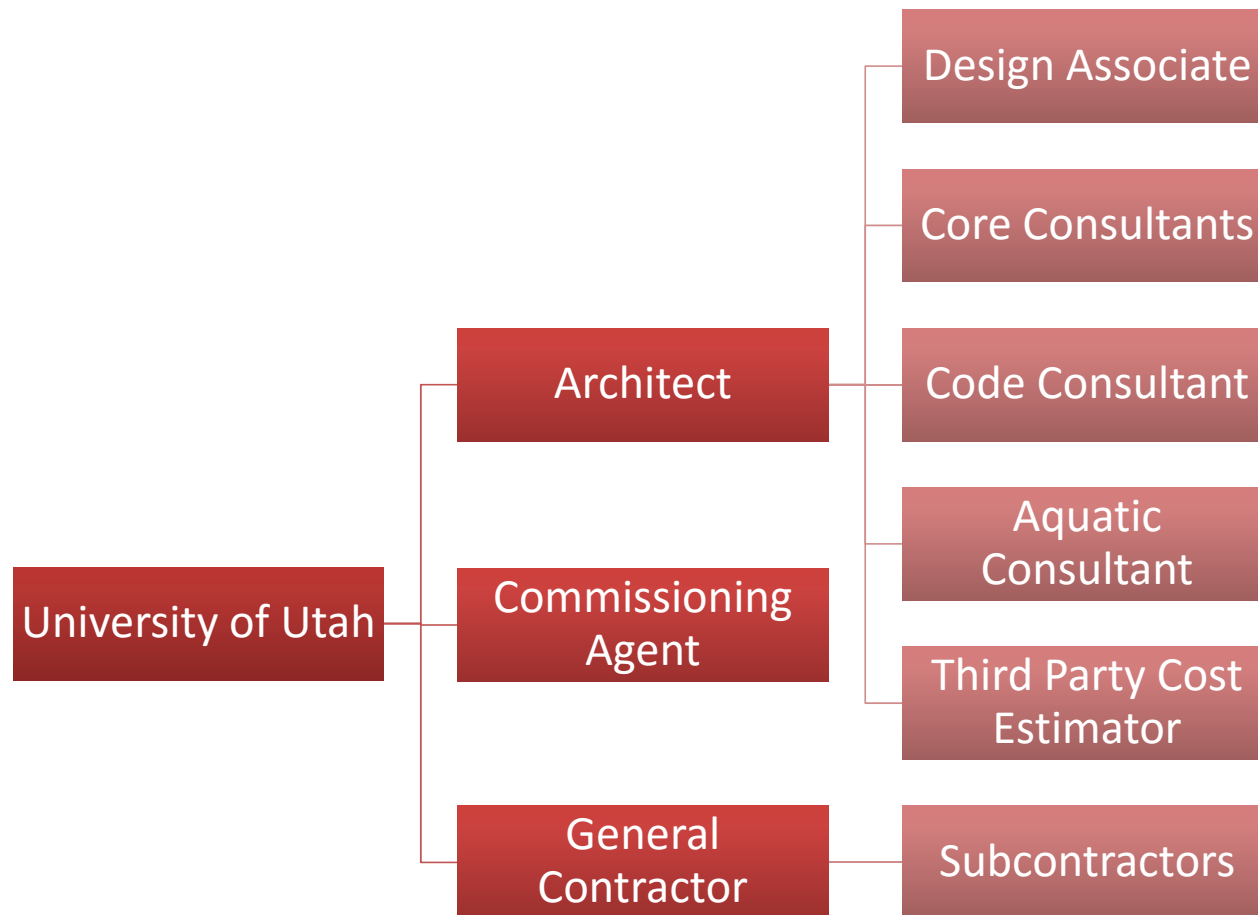
University of Utah – George S. Eccles Student Life Center



University of Utah – George S. Eccles Student Life Center

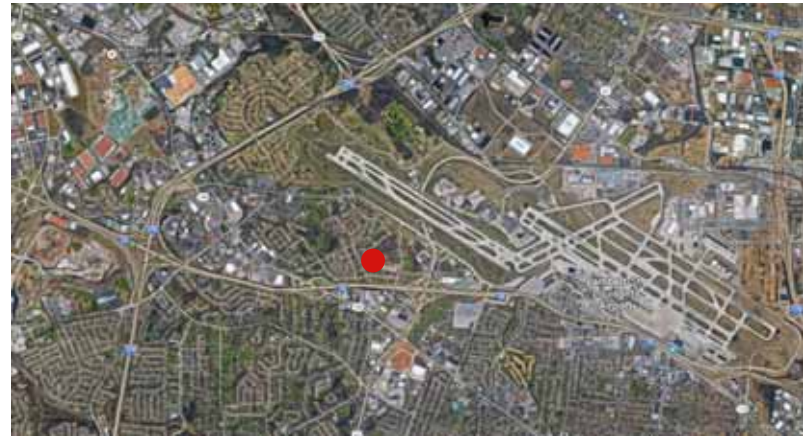


University of Utah – George S. Eccles Student Life Center



City of Bridgeton – Community Center

- Suburb of St. Louis, MO
- Population = 11,780
- Median Age 44.6 years
- Median income = \$49,216
- Mature community
- Very limited staff
 - Parks & recreation
 - Facilities
- Bond issue funding



City of Bridgeton – Community Center

- 55,275 SF
- \$13,500,00
- Two court gymnasium
- Running/walking track
- Meeting, party, game rooms
- Parks and recreation offices
- Fitness & free weights
- Natatorium
- Babysitting area



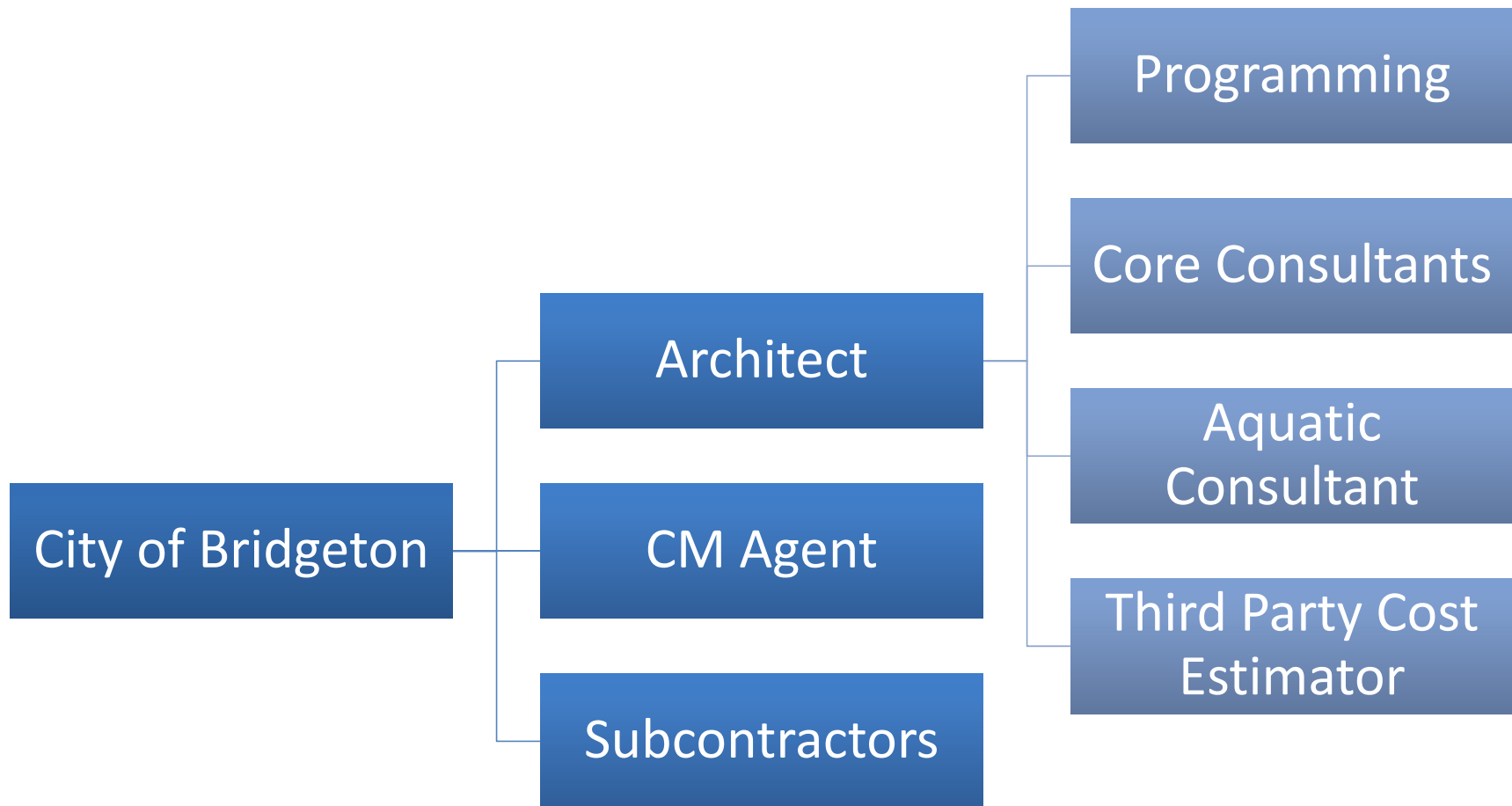
City of Bridgeton – Community Center



City of Bridgeton – Community Center

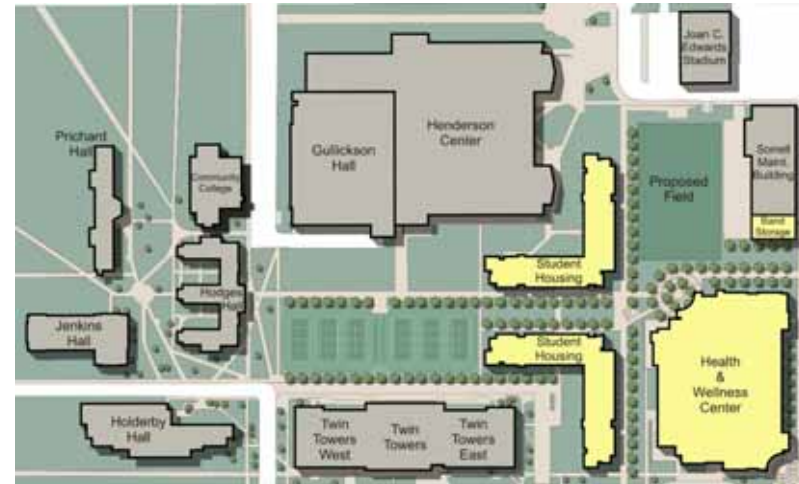


City of Bridgeton – Community Center



Marshall University - Student Recreation Center

- Huntington, WV
- Enrollment – 13,321
- Master plan completed
Housing & recreation
'Wellness Village'
- Student fee funded
- Full facilities staff
- Rec shared with HPER & athletics
- Limited existing recreation staff
- Vested interest by president



Marshall University - Student Recreation Center

- 123,150 SF
- \$25,000,000
- Four court gym
- Aquatic Center
- Cardio/weight areas
- Group fitness rooms
- Track
- Racquetball
- Wellness center



First Floor



Second Floor



Third Floor

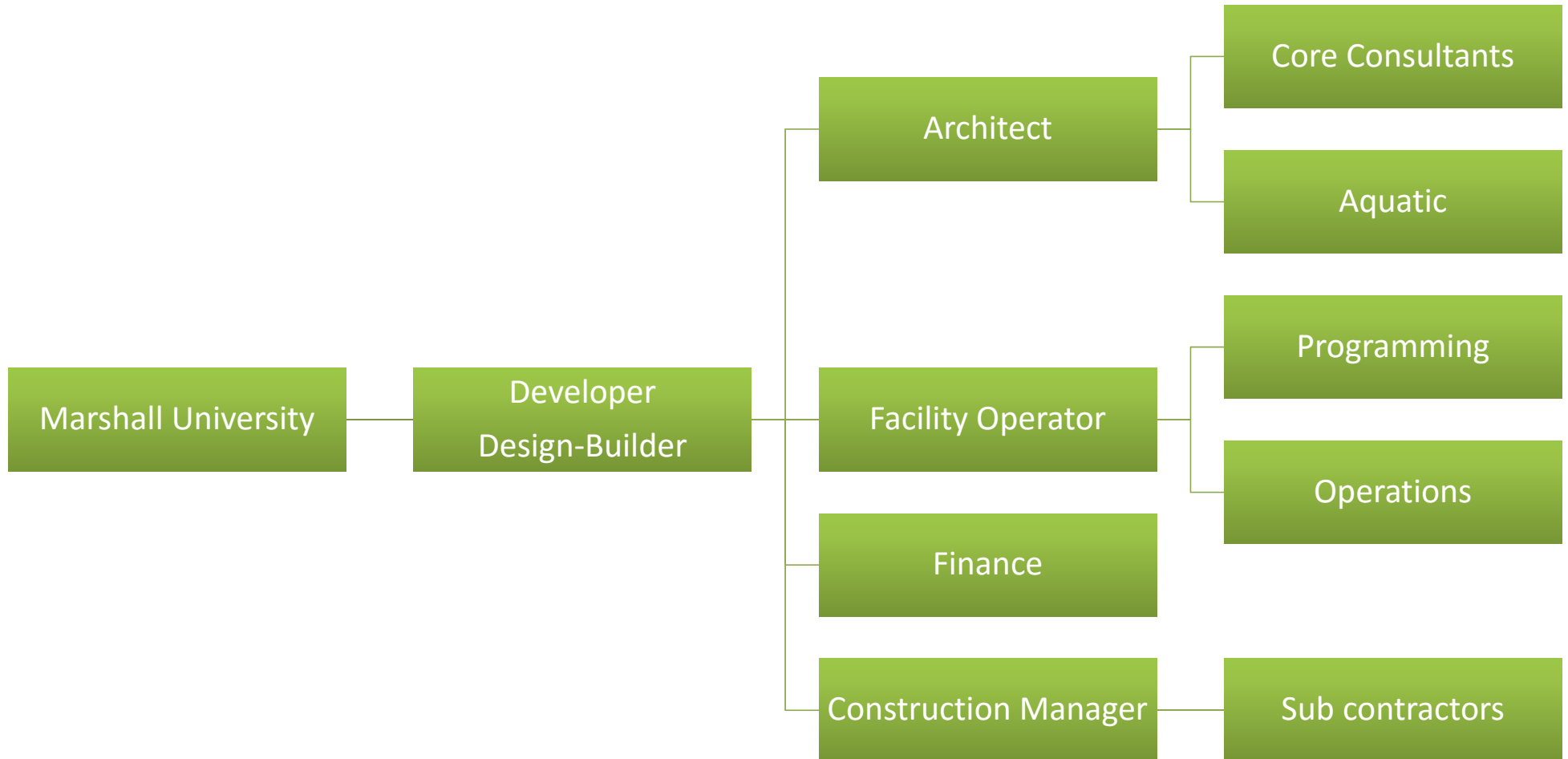
Marshall University - Student Recreation Center



Marshall University - Student Recreation Center



Marshall University - Student Recreation Center



Questions?



Part V

Summary

Cost of Team

- \$25M assumed construction cost
- Program components
 - Parking for 200 cars
 - Lobby/lounge
 - Gymnasium
 - Pool
 - Fitness center
 - Jogging track
 - Multi-purpose rooms
 - Offices
 - Support space



Cost of Team

Owner	% Range		Fee Range	
Surveyor			\$10,000	\$15,000
Geotechnical Engineer			\$10,000	\$15,000
Material Testing			\$75,000	\$150,000
Commissioning Agent			\$62,500	\$125,000
Hazardous Material Abatement			\$25,000	\$50,000
Miscellaneous Expertise			\$100,000	\$200,000
Owner's Rep	1.5%	2.0%	\$375,000	\$500,000
Total - Owner			\$657,500	\$1,055,000
Pre-Design				
Programming			\$50,000	\$75,000
Operations Consultant			\$25,000	\$50,000
Master Planning			\$75,000	\$125,000
Total - Pre-Design			\$150,000	\$250,000

Cost of Team

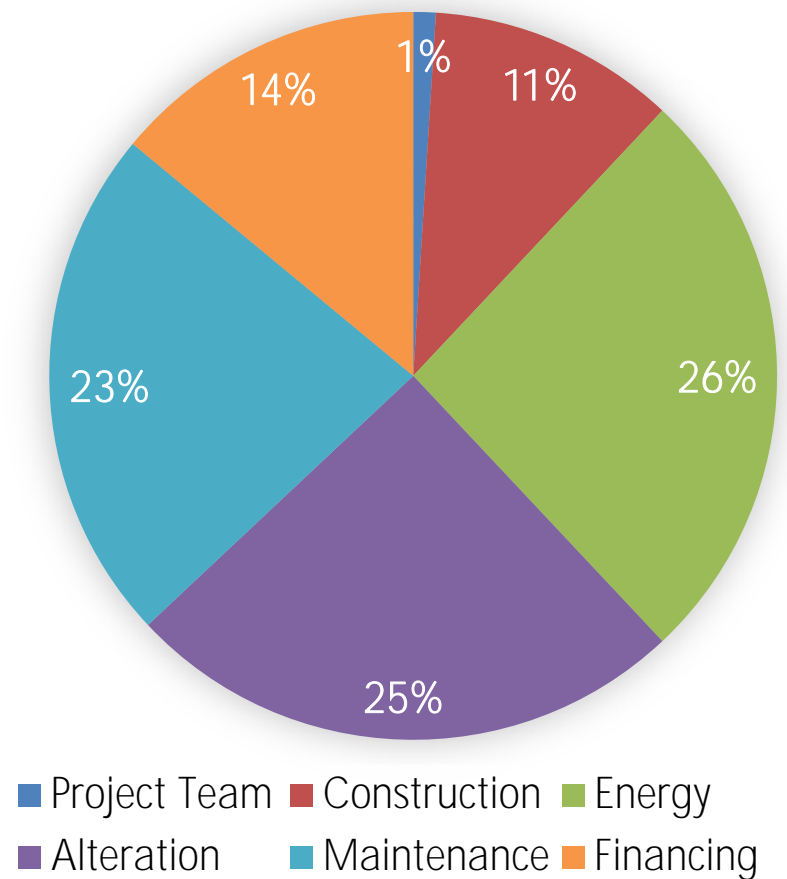
Architect				
Architecture + Core Consultants	6.5%	7.5%	\$1,625,000	\$1,875,000
Specialty Consultants				
Aquatics			\$75,000	\$150,000
Landscaping			\$25,000	\$50,000
Cost Estimating			\$25,000	\$50,000
A/V Systems			\$50,000	\$75,000
Security Systems			\$25,000	\$50,000
Code Analysis			\$12,500	\$25,000
Sustainability			\$75,000	\$125,000
Acoustical			\$25,000	\$50,000
Graphics, Signage, Wayfinding			\$25,000	\$50,000
Exhibit & Display			\$50,000	\$75,000
Furniture			\$25,000	\$50,000
Total - Specialty Consultants			\$412,500	\$750,000
Constructor				
Construction Manager	2.5%	4.0%	\$625,000	\$1,000,000
TOTAL - MINIMUM TEAM	7%	9%	\$1,795,000	\$2,205,000
TOTAL - COMMON TEAM	8%	11%	\$2,032,500	\$2,630,000
TOTAL - ALL CONSULTANTS	14%	20%	\$3,470,000	\$4,930,000

Cost of Team

Owner	% Range		Fee Range	
Surveyor			\$10,000	\$15,000
Geotechnical Engineer			\$10,000	\$15,000
Material Testing			\$75,000	\$150,000
Commissioning Agent			\$62,500	\$125,000
Hazardous Material Abatement			\$25,000	\$50,000
Miscellaneous Expertise			\$100,000	\$200,000
Owner's Rep	1.5%	2.0%	\$375,000	\$500,000
Total - Owner			\$657,500	\$1,055,000
Pre-Design				
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Operations Consultant			\$25,000	\$50,000
Master Planning			\$75,000	\$125,000
Total - Pre-Design			\$150,000	\$250,000
Architect				
Architecture + Core Consultants	6.5%	7.5%	\$1,625,000	\$1,875,000
Specialty Consultants				
Aquatics			\$75,000	\$150,000
Landscaping			\$25,000	\$50,000
Cost Estimating			\$25,000	\$50,000
A/V Systems			\$50,000	\$75,000
Security Systems			\$25,000	\$50,000
Code Analysis			\$12,500	\$25,000
Sustainability			\$75,000	\$125,000
Acoustical			\$25,000	\$50,000
Graphics, Signage, Wayfinding			\$25,000	\$50,000
Exhibit & Display			\$50,000	\$75,000
Furniture			\$25,000	\$50,000
Total - Specialty Consultants			\$412,500	\$750,000
Constructor				
Construction Manager	2.5%	4.0%	\$625,000	\$1,000,000
TOTAL - MINIMUM TEAM	7%	9%	\$1,795,000	\$2,205,000
TOTAL - COMMON TEAM	8%	11%	\$2,032,500	\$2,630,000
TOTAL - ALL CONSULTANTS	14%	20%	\$3,470,000	\$4,930,000

Cost of Team

- Lifetime cost of building
 - Project team 1%
 - Construction cost 11%
 - Energy 26%
 - Alteration 25%
 - Maintenance 23%
 - Financing 14%
- The project team impacts all of these



Strategies For Success

DO THIS

- Include others
- Consensus decision
- Hire qualified experts
- Plan for transitions
- Structured selection process

NOT THAT

- Work in a vacuum
- Central authority
- Take low bid
- Ignore change - budget & schedule
- Informal interview

You Should Now:

- Understand who the key players are on a project team.
- Know the value each member can bring.
- Understand the available construction delivery options & the benefits of each.
- Know what selection procedures will yield the best project team and outcome.



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