



Contract for Design & Construction Phase Services for Environmental Lab

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Current Status of Environmental Services (ES) Laboratory

- **Three independent reviews have cited deficiencies in:**
 - **No room for new equipment or to increase number of existing analyses**
 - **Not enough room to comply with manufacturers recommended space requirements for equipment**
 - **Insufficient on-site storage space**
 - **No workshop space**
 - **Environmental controls inadequate**



Pre-Pandemic Conclusions and Original Recommendation

- **Central Office has a net need of 24,232 sq-ft to house 126 employees**
- **Central Office will likely reach maximum capacity within 15 years even after implementing GS recommendations for reconfiguration**
- **Projected CO Workspace deficiencies can be met within the existing footprint of CO, if the following occur:**
 - **Construction of Environmental Operations Facility (EOF) Off-site to house all of Environmental Services**
 - **Inclusion of Office of Safety and Security (OSS) and Electrical Operations Department in EOF**
 - **Inclusion of business continuity hardware at EOF**
 - **Structured modifications to CO to more efficiently utilize existing space**

Post-Pandemic Scenarios

- **Evaluated 5 Additional Scenarios**
 - 3 reduced versions of the recommended off-site facility
 - 1 laboratory and equipment storage buildings built adjacent to Central Office
 - 1 expanding laboratory in Central Office

Class 4 OPPC Construction Estimates for Each Scenario

Option	Opinion of Probable Construction Cost	Low End (-15%)	High End (25%)
Original Plan	\$13,137,437	\$11,166,822	\$17,078,668
Scenario 1	\$12,349,203	\$10,496,823	\$16,053,964
Scenario 2	\$11,281,116	\$9,588,949	\$14,665,451
Scenario 3	\$11,087,864	\$9,424,684	\$14,414,223
Scenario 4	\$7,050,182	\$5,992,655	\$8,812,728
Scenario 5	\$6,328,749	\$5,379,437	\$7,910,936

Scenario 4 Conceptual Site Plan



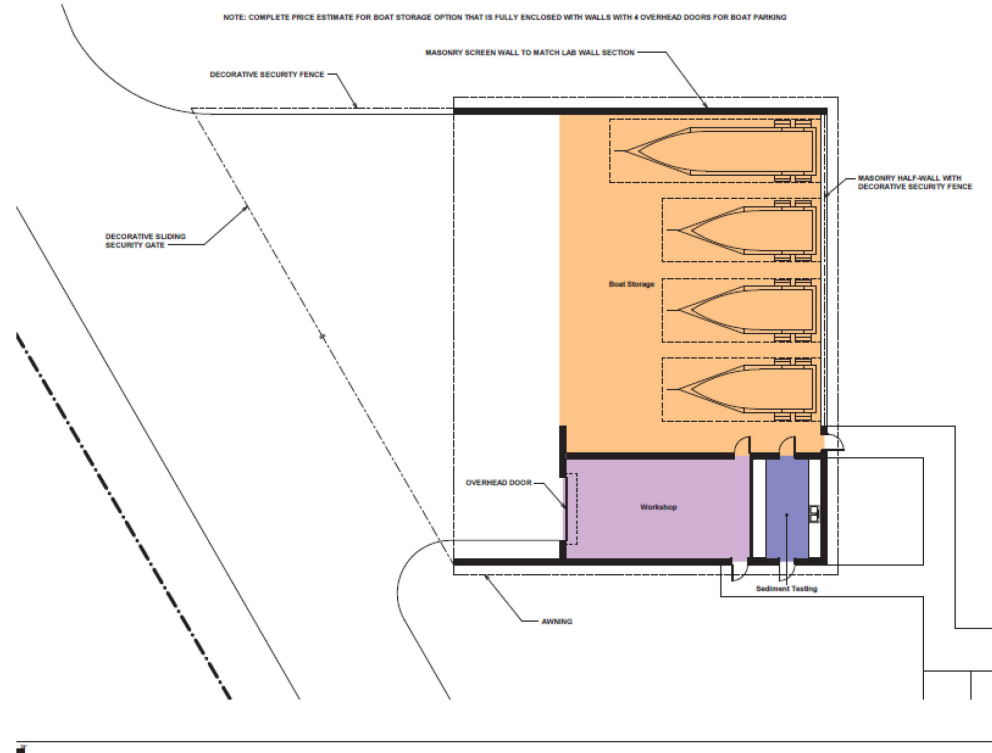


Scenario 4 Conceptual Lab Plan





Scenario 4 Conceptual Storage Plan



Components Unique to Laboratory Design

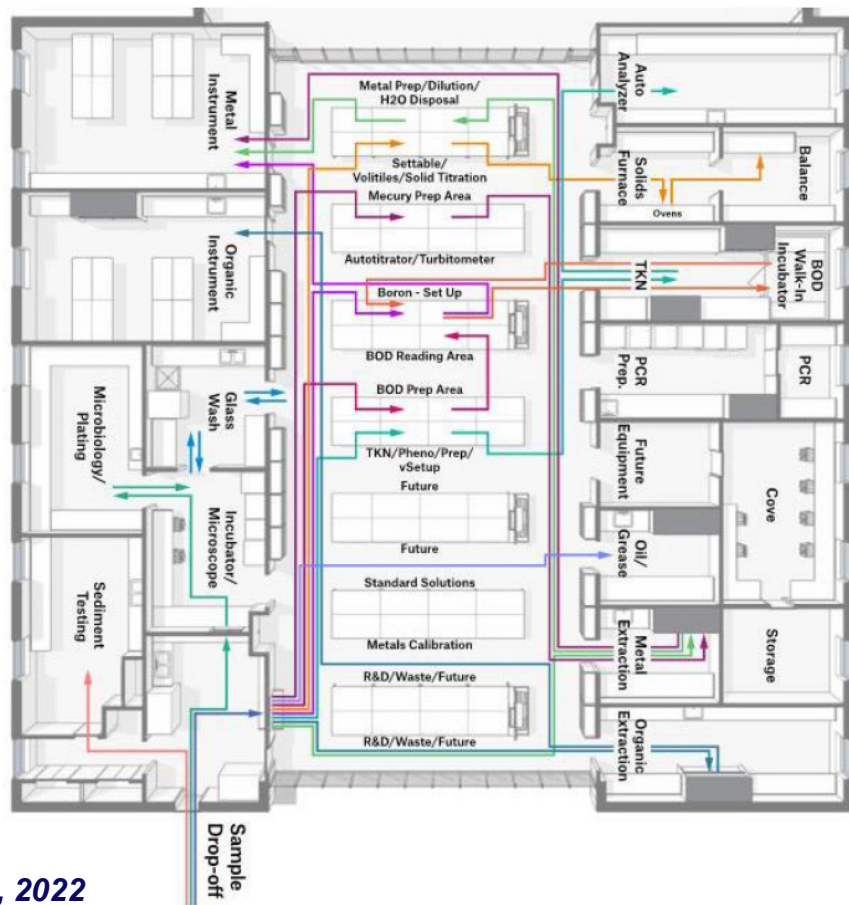
- **Temperature held steady between 70-73°F**
- **Ambient humidity maintained at less than 50%**
- **Varied, specialty, electrical loads**
- **Multiple, isolated HVAC systems**
- **Deionized and ultra-pure water systems and distribution lines**
- **Chemical neutralization system for all sink and floor drains**
- **Ventilation systems including chemical fume hoods, snorkels, and steam vents**
- **Fire suppression system, safety shower/eye wash stations**
- **Vacuum lines**
- **Gas lines for carrying compressed gases**
- **Analytical waste collection and waste storage systems**

Value in New Laboratory
























- **Independent air system**
 - Eliminates exposure to rest of CO
 - Improved ventilation and air quality for lab staff
 - Improve climate control to support analyses
- **Increased safety and productivity for lab staff**
- **Coordinated layout for complex workflows**
 - Independent types of testing
 - Isolation capability for discrete analysis
 - Capability for future expansion of analytical capabilities
- **Increased efficiency for Aquatic Scientists**



Laboratory Workflow



Typical Industry Unit Costs

CONSTRUCTION COST PER SQUARE FOOT (PSF) AVERAGE COST PER SQUARE FOOT IN THE UNITED STATES							
Commercial Office Space	Hospitality	Warehouse & Manufacturing Facilities	Healthcare	Schools	Universities	Public & Community Facilities	Parking Structures
 Single story \$313 psf	 3-star hotel \$478 psf	 Regional distribution center \$214 psf	 Medical office \$498 psf	 Elementary - \$295 psf Middle school - \$325 psf High school - \$359 psf	 Dormitory \$322 psf	 Gymnasium \$403 psf	 Above-ground /multi-level parking \$71 psf
 Mid-rise \$562 psf	 5-star hotel \$691 psf	 Light industrial warehouse \$238 psf	 Specialty clinic \$619 psf	 Primary/Secondary \$327 psf	 Standard classroom building \$580 psf	 Police station \$580 psf	 Below-ground /multi-level parking \$143 psf
 High-rise \$660 psf		 Tech lab factory \$635 psf	 Acute care facility \$888 psf		 Admin building \$596 psf	 Government admin building \$591 psf	
					 Laboratory \$756 psf	 Museum/Performing arts center \$892 psf	

LEVELSET



Basis of Projected Laboratory Building Construction Costs

Class IV Estimate	
Category	Combined Costs
Masonry/Concrete	\$ 265,775
Structural Steel	\$ 416,898
Wood and Plastic	\$ 2,790
Thermal Moisture	\$ 235,485
Exterior	\$ 573,281
Doors, Framing, Hardware	\$ 63,369
Finishes	\$ 332,471
Specialties	\$ 52,522
Equipment	\$ 168,380
Plumbing, Fireproofing, Water Filtration	\$ 1,420,510
HVAC	\$ 1,324,481
Electrical, Communications	\$ 1,159,667
Furnishings, Cabinetry, Equipment	\$ 1,530,316
Total	\$ 7,545,945
Unit Cost 10,764 SF Laboratory Building	\$ 701.04

Typical Construction Cost Ranges	
Type of Construction	Construction Cost Ranges/SQ
Residential	\$200 to \$400
Commercial	\$190 to \$210
Office Buildings	\$250 to \$275
Specialty Environment (Large Particle HVAC)	\$700 to \$1500
True Clean Room Environments (Small Particle HVAC, airlocks)	\$2000 to \$3500

RFP for Design and Construction Phase Services

- **Supports Strategic Plan Goal IV(c)**
- **Two responses**
- **Gresham Smith selected architectural and engineering firm**
- **Extensive laboratory design experience**

Tasks and Schedule

Task Number	Task Description	Schedule
1	Preliminary Evaluation Services	30 days
2	Engineering Design Services	365 days
3	Advertising and Bidding Services	TBD
4	Construction Contract Administration Services	TBD
5	Construction Phase Engineering Services	TBD
6	Resident Project Representative Services	TBD

Not to Exceed Fee by Task

Task Number	Task Description	Fee
1	Preliminary Evaluation Services	\$60,997
2	Engineering Design Services	\$963,790
3	Advertising and Bidding Services	\$22,037
4	Construction Contract Administration Services	\$122,226
5	Construction Phase Engineering Services	\$98,359
6	Resident Project Representative Services	\$226,934
TOTAL		\$1,494,343

Next Steps

- **Execute contract for design and construction phase services**
 - Preliminary Evaluation
 - Design Services
 - Advertising, Bidding and Contract Award Services
 - Construction Contract Administration Services
 - Construction Phase Engineering Services
 - Resident Project Representative Services
- **BOD approval to move to construction phase of the project**

“BE IT RESOLVED that the Board of Directors of the Brazos River Authority hereby authorizes the General Manager/CEO to negotiate and enter into a contract with Gresham-Smith, an architectural and engineering firm, for design services, bid phase services, construction contract administration and construction phase engineering, and resident project representative services of the Environmental Services Laboratory and equipment storage building in an amount not to exceed \$1,494,343.”



**Brazos
River
Authority**