



**2025
INTERNATIONAL
HI-TECH/
MANUFACTURING/
CLEANROOM**

Bio / Pharmaceutical Manufacturing Facilities

2024 US \$ Cost Basis

#	Description	US East Coast Close To Wash DC	US West Coast	US East Coast Close To Boston	Western Europe	Western Europe
1	Building Area in Square Feet					
2	Building Area in Square Meters					
3	Building Footprint Site Work					
4	Core & Shell / External Walls & Roof					
5	Interior Fit Out / Special finishes such as pass thru & air locks					
6	Plumbing & Fire Protection scope					
7	HVAC / HEPA type scope					
8	Electrical Scope					
9	Process Control / Instrumentation					
10	Utility Piping					
11	Process Piping					
12	Elevators / Goods Lifts / Escalator					
13	Utility Equipment					
14	Process / Production Equipment					
15	Total Construction Cost					
16	Engineering / Detailed Design					
17	Construction Management					

EXCLUDES: Overall Facility Site Work / Incoming Utilities Roads / Paths / Parking Areas Landscaping, Gatehouse & Fencing Owner Costs Land Purchase

1.33 Cost Model - Automobile Production

AUTOMOBILE PRODUCTION FACILITY

1 Story, 20 Ft Floor to Ceiling Height, 585,000 Square Feet

EXTERIOR	COST PER SQUARE FOOT - M2
Pre cast panels, reinforced concrete frame	
Insulated metal panels, steel frame	
Fully completed facility with production equipment	

AUTOMOBILE PRODUCTION FACILITY

CSI Division	Description	% Range Of Cost	Remarks
1	General Requirements		
2	Site Construction		
3	Concrete		
4	Masonry		
5	Metals		
6	Wood & Plastics		
7	Thermal & Moisture Protection		
8	Doors & Windows		
9	Finishes		
10	Specialties		
11	Equipment		
12	Furnishings		
13	Special Construction		
14	Conveying Systems		
15	Mechanical		
16	Electrical		
	Total Percentage		
	A / E Fees		
	CM Fees		

Excludes: New utilities outside building footprint, parking areas, roads, gatehouses, fencing, landscaping, and demolition of existing facilities

MANUFACTURING / CHEMICAL CO. CENTRAL R&D FACILITY

2 Floors, 18 Ft Story Height, 72,000 Square Feet

EXTERIOR	COST PER SQUARE FOOT - M2
Brick, concrete block back-up steel frame	
Pre cast panels, steel frame	
Metal and Glass / Curtain wall	

Manufacturing / Chemical Co. R&D Facility

CSI Division	Description	% Range Of Cost	Remarks
1	General Requirements		
2	Site Construction		
3	Concrete		
4	Masonry		
5	Metals		
6	Wood & Plastics		
7	Thermal & Moisture Protection		
8	Doors & Windows		
9	Finishes		
10	Specialties		
11	Equipment		
12	Furnishings		
13	Special Construction		
14	Conveying Systems		
15	Mechanical		
16	Electrical		
	Total Percentage		
	A / E Fees		
	CM Fees		

Excludes: New utilities outside building footprint, parking areas, roads, gatehouses, fencing, landscaping, and demolition of existing facilities

PHARMACEUTICAL DEVELOPMENT FACILITY

2 Floors, 17 Ft Story Height, 78,000 Square Feet (10% - 20% ISO # 8 & 9)

EXTERIOR	COST PER SQUARE FOOT - M2
Brick, concrete block back-up steel frame	
Pre cast panels, steel frame	
Metal and Glass or Stone Curtain wall	

Pharmaceutical Development Facility

CSI Division	Description	% Range Of Cost	Remarks
1	General Requirements		
2	Site Construction		
3	Concrete		
4	Masonry		
5	Metals		
6	Wood & Plastics		
7	Thermal & Moisture Protection		
8	Doors & Windows		
9	Finishes		
10	Specialties		
11	Equipment		
12	Furnishings		
13	Special Construction		
14	Conveying Systems		
15	Mechanical		
16	Electrical		
	Total Percentage		
	A / E Fees		
	CM Fees		
	Validation		

Excludes: New utilities outside building footprint, parking areas, roads, gatehouses, fencing, landscaping, and demolition of existing facilities

Carbon Steel / Stainless Steel and Other Piping Systems

The following tables detail material and labor costs related to various “common” piping systems.

The tables outline 2024 budget pricing for various piping systems by diameter, (the accuracy of these values can be considered +/- 10%): The costs include the purchase of piping materials delivered to site,

pipe fabrication / welding / screwed connections in some cases for small bore pipe, fittings, manual valves, flanges and reducers and erection.

- The costs are shown for Lineal feet (LF) and for Meters (M)
- To convert \$ M-H cost into man-hours divide value by \$91.25

SS Welding - Man-hours

Butt-weld fittings 304 and 316 SS schedule 10

Diameter	Tee	180 Degree Elbow	90 Degree Elbow	45 Degree Elbow	Concentric Reducer
1/2"					
3/4"					
1"					
1 1/2"					
2"					
3"					
4"					

SS Welding - Man-hours

Butt-weld fittings 304 and 316 SS schedule 40

Diameter	Tee	180 Degree Elbow	90 Degree Elbow	45 Degree Elbow	Concentric Reducer
1/2"					
3/4"					
1"					
1 1/2"					
2"					
3"					
4"					

SS Welding - Man-hours

Butt-weld fittings 304 and 316 SS schedule 80

Diameter	Tee	180 Degree Elbow	90 Degree Elbow	45 Degree Elbow	Concentric Reducer
1/2"					

New Construction and Revamp Construction Capital Cost Estimating Factors / Calibrations

Facility / Building Costs New vs. Revamped / Upgraded (values include A/E costs, CM costs, they exclude land purchase and any owner costs).

Facility / Building Costs	Cost Model SF	Average SF \$ Cost "A" New	"B" SF/ \$ Cost 0.70	"C" SF/ \$ Cost 0.35	"D" SF/ \$ Cost 0.20
Advanced Chemical Weapons Laboratory					
Agricultural R&D Center					
Animal Research / Testing Facility 2 Floors					
API – Pharmaceutical Facility					
Automobile Production Facility (Shell only)					
Bio – Medical / R&D Center 3 Floors					
Brewery (Shell only)					
Cable TV Facility					
Chemical Process Plants 3 Floors					
Computer / Telecommunications Center 2 Floors					
Data Processing Office / Center					
Fiber Production Facility					
Heavy Manufacturing Facility					
High Speed / Volume Lyophilize Facility					
Hospital (3 floors RC frame)					
Hotel (7 floors)					
Lithographic Line					
Livestock / Agricultural Research Station					
Manufacturing Light					
Micro Chip / Satellite Manufacturing Facility					
Oral Solid Dosage (OSD) tablet Facility					
Office 5 - 20 Floors (Shell only – no fit out)					
Paper Production (Shell only)					
Refrigerated Warehouses					
Research Laboratory (Basic Research) 2 Floors					
Research Center Auto / Jet Engine Testing					
Tire Manufacturing Facility (excludes production equipment)					
Warehouse 80% / Office 20% / Distribution Center					
Warehouse (VL) Logistics Center					

A = “New Build” / Grass roots facility: includes project specific site works, landscaping and new utilities required.

B = Major Revamp / rehabilitation: assumes that facilities “External Enclosure” i.e. external walls, windows, roof (possibly) and structural shell (structural steel or CIP concrete / floors) can be reused. New services / utilities / life support services will be required. new internal walls. ceilings and floors will be

to some extent, however new load centers and new wiring will most probably be needed. Ductwork, new sprinkler systems, piping systems, over 15 years old, would most probably be replaced in this application. (Use 25% - 50% of “A” values – for the example below we have used 0.35) Refer to note 1 above; building may need to be completed in phases. New or limited laboratory services may be added (gas, water and power), and possibly new ductwork and lighting needs could be part of this component.

3.6 Unit Price Data - General Conditions & Demolition

Unit Price Estimating Data - General Conditions & Demolition

HI-TECH / Manufacturing capital projects

#	Description	Unit	Material	Labor	Total
(1) CSI DIVISION 1 / GENERAL CONDITIONS & DEMOLITION WORK					
1	Project / Construction Manager				
2	Superintendent				
3	Assistant Superintendent				
4	Field Engineer				
5	Field Cost Engineer / Estimator				
6	Field Purchasing Agent				
7	General Foreman				
8	Timekeeper / Clerk				
9	Planner / Cost Engineer / Office Administrator				
10	Safety Engineer				
11	Warehouse Supervisor				
12	Secretary				
13	Demolition, fencing chain link 8' to 12'high				
14	Tipping Fee's General Construction Material				
15	Demolition, frame building, one story				
16	Demolition, frame building, two story				
17	Demolition, frame building, three story				
18	Demolition, concrete block building, two story				
19	Demolition, concrete building, pre cast panel, frame roof				
20	Demolition, steel frame building, salvage steel				
	DEMOLITION, WALL				
21	Demolition, remove wall, concrete to 10" thick reinforced				
22	Demolition, remove wall, concrete block, reinforced				
23	Demolition, remove wall, 8" solid brick, reinforced, grout				
	DEMOLITION, ROOF				
24	Demolition, remove built-up roof, on plywood				
25	Demolition, remove built-up roof, on concrete				
	DEMOLITION, CEILING				
26	Demolition, remove ceiling, plaster/ lath/ frame				
27	Demolition, remove ceiling, acoustic suspended grid				
	DEMOLITION, FOUNDATION				