

# CFAC Review

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Conventional Facilities Cost Estimate  
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# Outline

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- Cost Estimate Sources
- Cost Estimate Methods
- Construction Cost Escalation
- Parametric Comparisons
- Estimate Summary

# Cost Estimate Sources

WBS Number:	Description:	Direct FY07\$	Estimate Source
1.02.05	Conceptual Design - Conventional Facilities	4,233,810	NSLS II Engineering
1.05.01	Conventional Facilities Management	4,216,378	NSLS II Engineering
1.05.02	Conventional Facilities Design	18,152,501	Engineering/Actual Contracts
1.05.03	Conventional Facilities Construction	153,216,812	
1.05.03.01	CF Construction Management	5,983,608	HDR/VJ Assoc.
1.05.03.02	Improvements to Land	6,028,242	HDR/VJ Assoc.
1.05.03.03	Operations Center	5,004,454	HDR/VJ Assoc.
1.05.03.04	Injection Building	6,285,852	HDR/VJ Assoc.
1.05.03.05	RF Building	2,485,278	HDR/VJ Assoc.
1.05.03.06	Ring Building	77,709,863	HDR/VJ Assoc.
1.05.03.07	Lab-Office Buildings	19,058,732	HDR/VJ Assoc.
1.05.03.08	Mechanical Utilities	10,471,791	HDR/VJ Assoc.
1.05.03.09	Electrical Utilities	11,991,502	HDR/VJ Assoc.
1.05.03.10	LN2 & GN2 Distribution System	1,400,000	NSLS II Engineering
1.05.03.11	Chilled Water	6,797,490	Giffels
1.05.04	Integrated Controls & Communications	660,000	NSLS II Engineering
1.05.05	Standard Equipment	1,400,000	NSLS II Engineering
1.05.06	Commissioning	900,000	NSLS II Engineering
		\$ 182,779,501	

# Estimate Sources

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- Engineering Estimates
  - Prepared by BNL based on level of effort, engineering judgment, vendor quotes or parametric comparisons
  - Include staff labor hours, FTE's, BNL resource labor (ie. PE) and material & travel expenses
  - Labor rates applied by labor categories in cost database
  - Burden and escalation applied in cost database

# Estimate Sources cont'd

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- HDR / VJ associates - majority of CF
  - HDR is the A/E team preparing design for NSLS II CF
  - VJ is an estimating firm with extensive experience in the NY/LI construction market
    - They provided very accurate re-estimating support for the CFN Re-bid
    - Use their own Database built on experience in the NY/LI area
- Giffels Engineers – Chilled Water Facility
  - Performed design and construction of several projects at BNL CCWF

# Estimate Methods

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- Major construction items - WBS 1.5.3
  - Estimates primarily based on material quantity take-offs from the T-I drawings
  - Some systems that are not yet detailed are based on system cost/SF
  - Estimators used their own cost estimate systems developed to reflect cost of construction in the NY/LI area (this is their livelihood)
    - Reflects recent price experience on critical commodities like concrete, steel, copper etc.
  - Base cost is subcontractor cost plus OH&P
  - 15% is added for GC OH&P to account for bonds, insurance, supervision, safety, mobilization, site maintenance etc.

# Construction Escalation

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- Material Cost volatility of 05 & 06 has settled somewhat in 07
  - Some spikes in steel, concrete but some materials are dropping due to housing bust
- The majority of construction costs are labor, not material
  - Some areas with construction booms have seen labor shortages
  - NY City demand is high, Long Island demand is low-moderate
- ENR NY construction cost increase for 06 is 3.6%, 07 is 3.8% so far
- Large local contractors are using 5%
- We are using 5% as basis for escalation

# Cost Estimate Comparison

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- Overall Construction Cost/SF - \$365 with utilities/sitework
  - Ring Building - \$260/sf
  - LOB's - \$320/sf
  - Operations Center - \$420/sf
  - Injection Building - \$350/sf
- Comparison – in FY07\$
  - CFN \$405/sf – hi-tech lab facility with cleanrooms
  - Research Support Bldg - \$225/sf