

Construction Cost Planning and Management



DAVIS LANGDON

**NORTHWEST CONSTRUCTION
CONSUMER COUNCIL (NWCCC)**

Presentation: Measuring and Managing Cost Escalation

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Agenda

- Escalation-What is it?
- Escalation-Can we manage it?
- Discussion



Escalation

- The Immediate Issues
 - Major natural disasters
 - Material cost increases
 - Bid market disruption
 - High volume of construction work
 - Regulatory climate
- Upcoming Issues
 - Continued high demand for construction
 - Shortage of labor
 - Global economy



Escalation

Major Natural Disasters

- The reality:
 - Approximately 250,000 homes destroyed by Katrina, Rita & Wilma
 - Roughly another 250,000 homes seriously damaged
 - Typical annual damage is 50 – 75,000 lost or damaged
 - Annual new housing construction is roughly 2,000,000



Escalation

Major Natural Disasters

- The reality:
 - Approximately \$40bn in non-residential damage
 - Typical annual damage is \$bn10 – \$bn15
 - Annual non-residential market is roughly \$bn400



Managing Escalation

Major Natural Disasters

- The reality:
 - Total damage is 10 – 15% of annual construction market
 - Given duration of reconstruction, likely impact is in the 3 – 5% range
 - Significant, but not overwhelming



Escalation

Major Natural Disasters

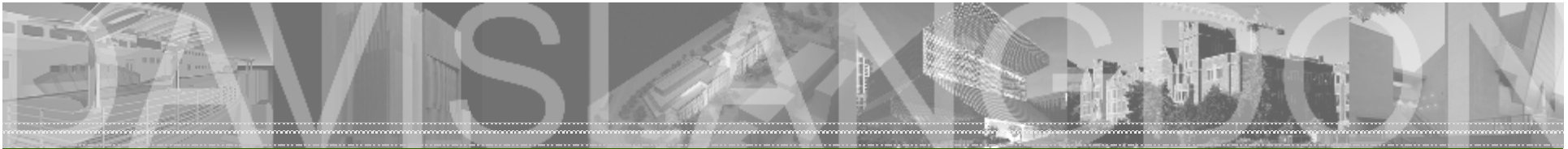
- The reality:
 - Materials
 - Likely to be sporadic shortages
 - Likely to be transient price spikes
 - Government intervention has skewed the market – so have rumors
 - There is a lot of uncertainty in price & availability



Escalation

Major Natural Disasters

- The reality:
 - Labor
 - Wages are lower than many parts of the country
 - Much of the labor is opportunist/non construction
 - The area has not drained the national pool of construction workers

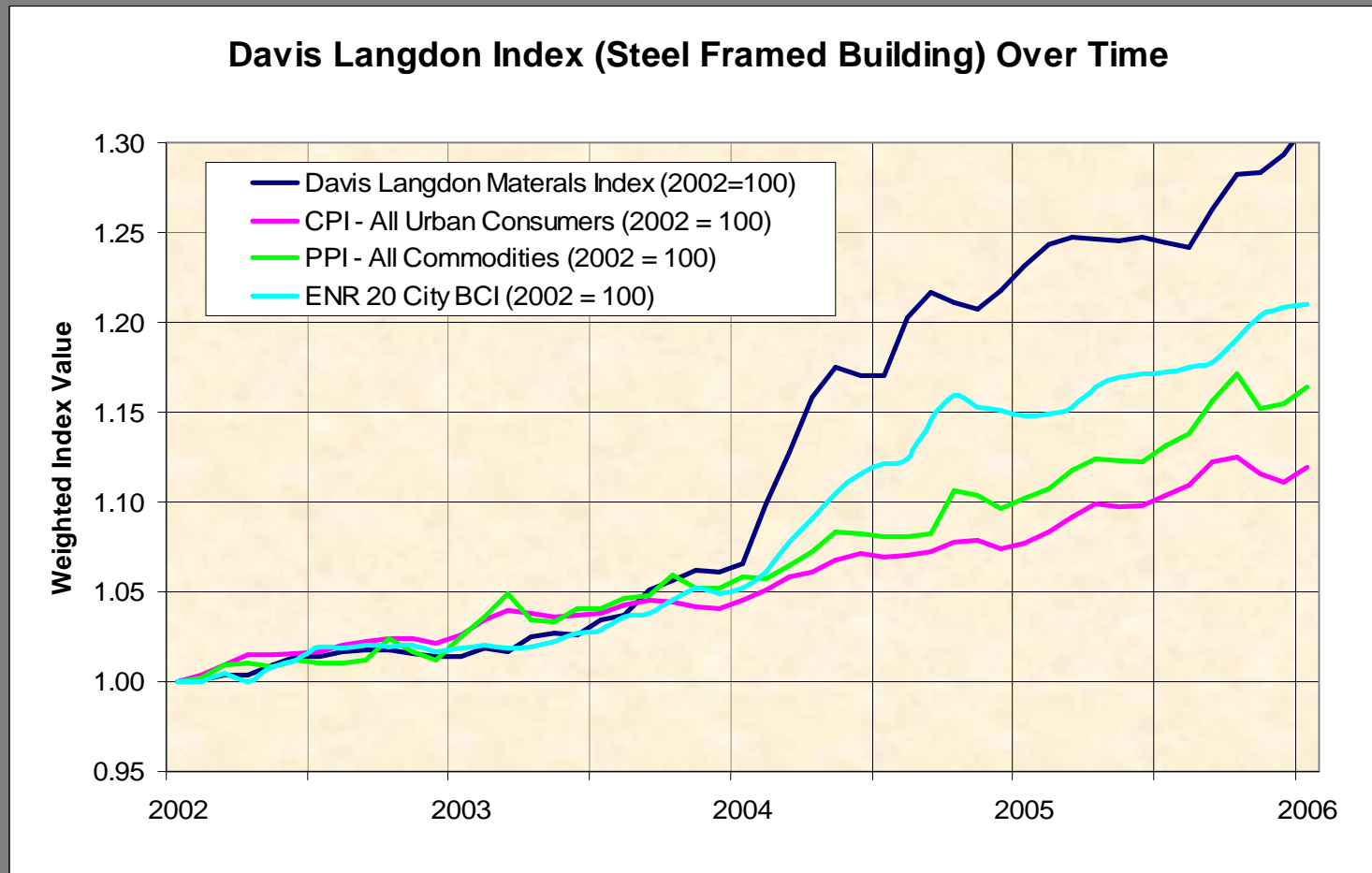


Escalation

Material Cost Increase

- The reality:

Escalation





Escalation

Material Cost Increase

- The Reality:
 - World steel prices rose by 100% in 2004- \$330/TN - \$600/TN
 - Prices have leveled off at about \$600/TN
 - US steel prices are higher than world steel prices by about \$100/TN
 - Steel was \$500/TN 10 years ago



Escalation

Steel Cost Increase

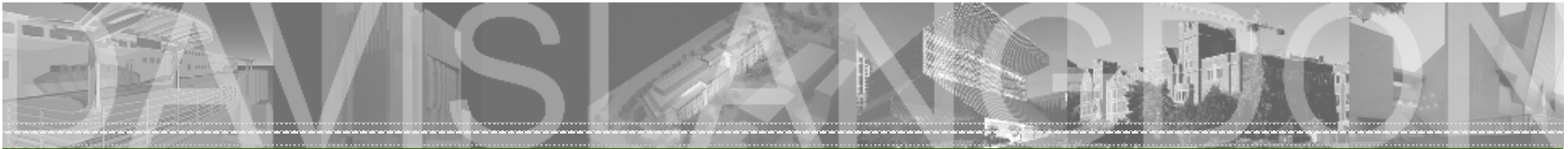
- The reality in construction:
 - Buildings use 20 - 30# of steel/GSF
 - At \$400/TN, that is about \$4.00/GSF
 - At \$700/TN, that is about \$7.00/GSF
 - Steel is everywhere in the building
 - Structure
 - Miscellaneous metals
 - Studs
 - Doors & Frames
 - Ductwork, Pipework & Conduit



Escalation

Material Cost Increase

- The reality:
 - Other strategic materials have seen significant increase
 - Wood
 - Cement
 - Copper
 - PVC pipe
 - Asphalt Oil
 - Pressure on strategic materials is likely to continue for some time
 - Commodity prices are likely to be volatile for some time



Cost of Construction

Material Cost Increase

- The reality:
 - Asphalt oil
 - Tons of oil/SF of roof
 - Oil
 - barrels of oil/SF of building
 - Copper
 - Tons of copper/SF of building
 - Diesel oil
 - Gallons of diesel/hour of operation



Cost of Construction

Material Cost Increase

The Reality:

When you are in the woods with a friend and
you are attacked by a bear . . .

Remember . . .

You don't have to run faster than the
bear . . .

Just faster than your friend .

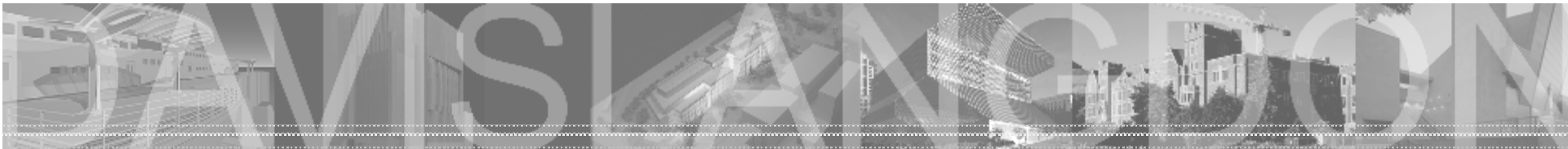
*Bidders do not bid on cost, they bid against
the competition*



Managing Escalation

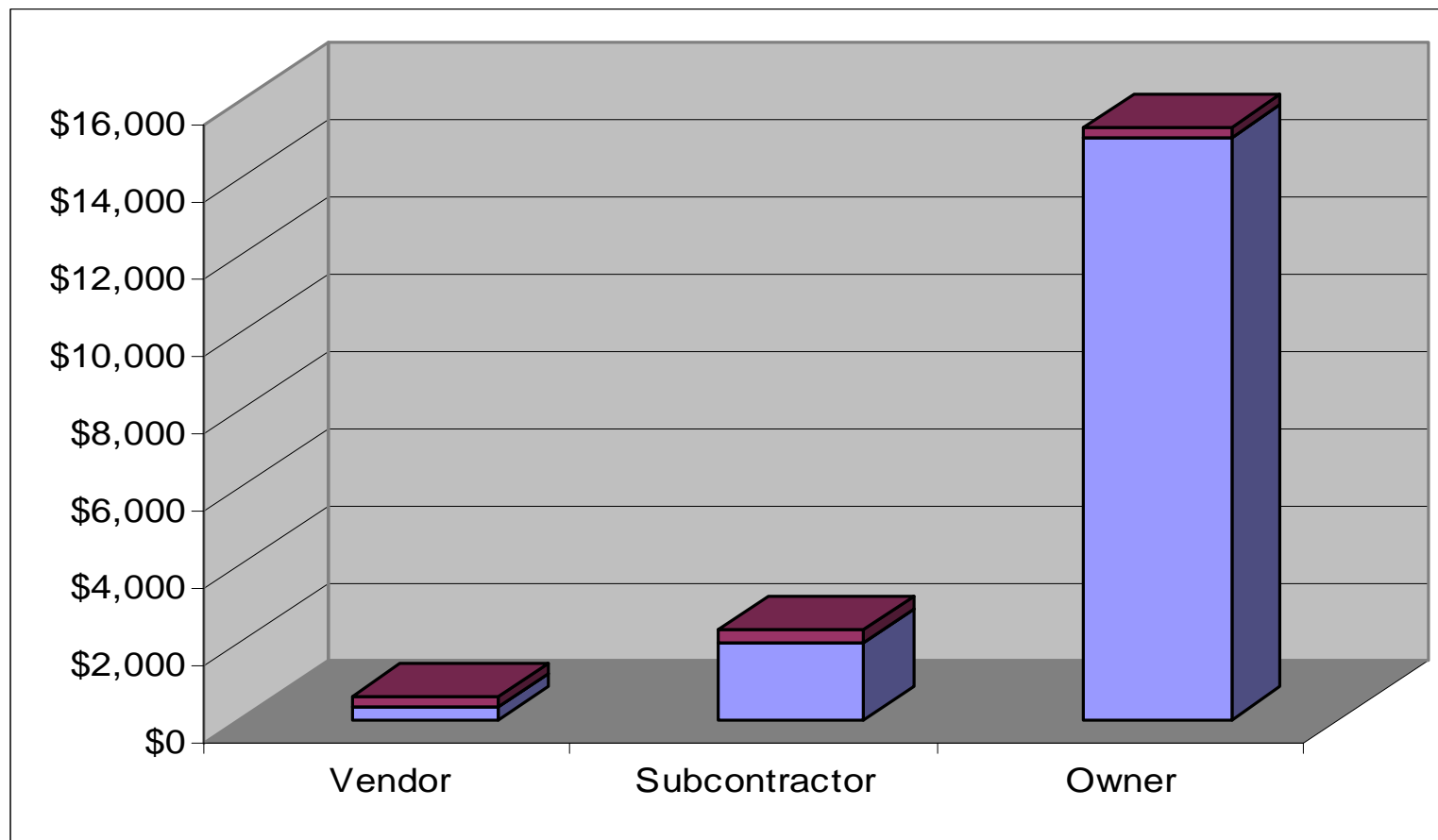
Market Disruption

- Volatility is a bigger issue than price increase.
 - Bidders can not lock in prices at bid time
 - Delivery schedules are extended
 - Bidders pay premiums to expedite supplies
 - Bidders double & triple book orders compounding shortage
 - Most contracts concentrate volatility risk at the lowest level (Vendor/Subcontractor)
 - Contractors are nervous



Managing Escalation

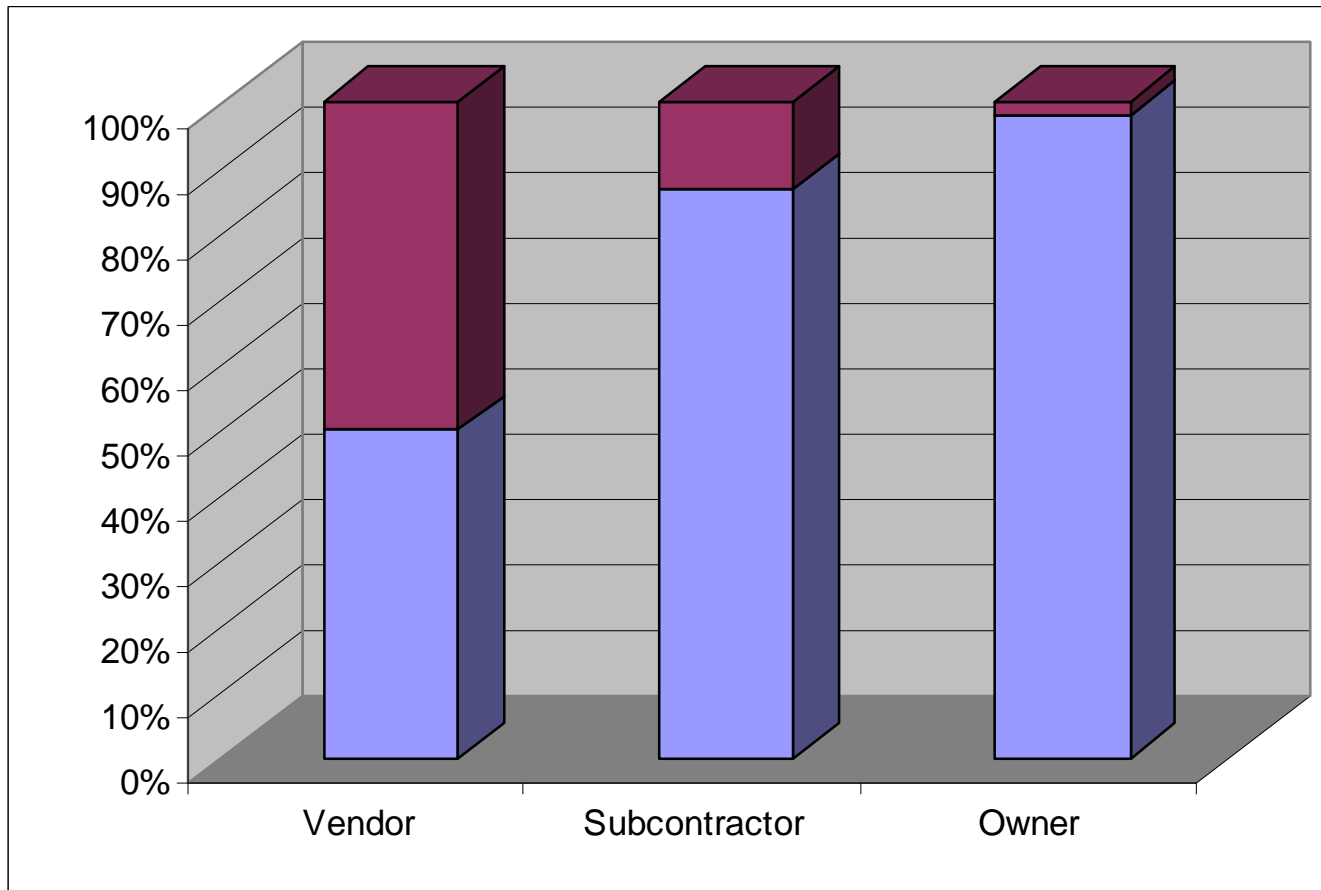
STEEL PRICING





Managing Escalation

PUTTING THE RISK IN THE WRONG PLACE

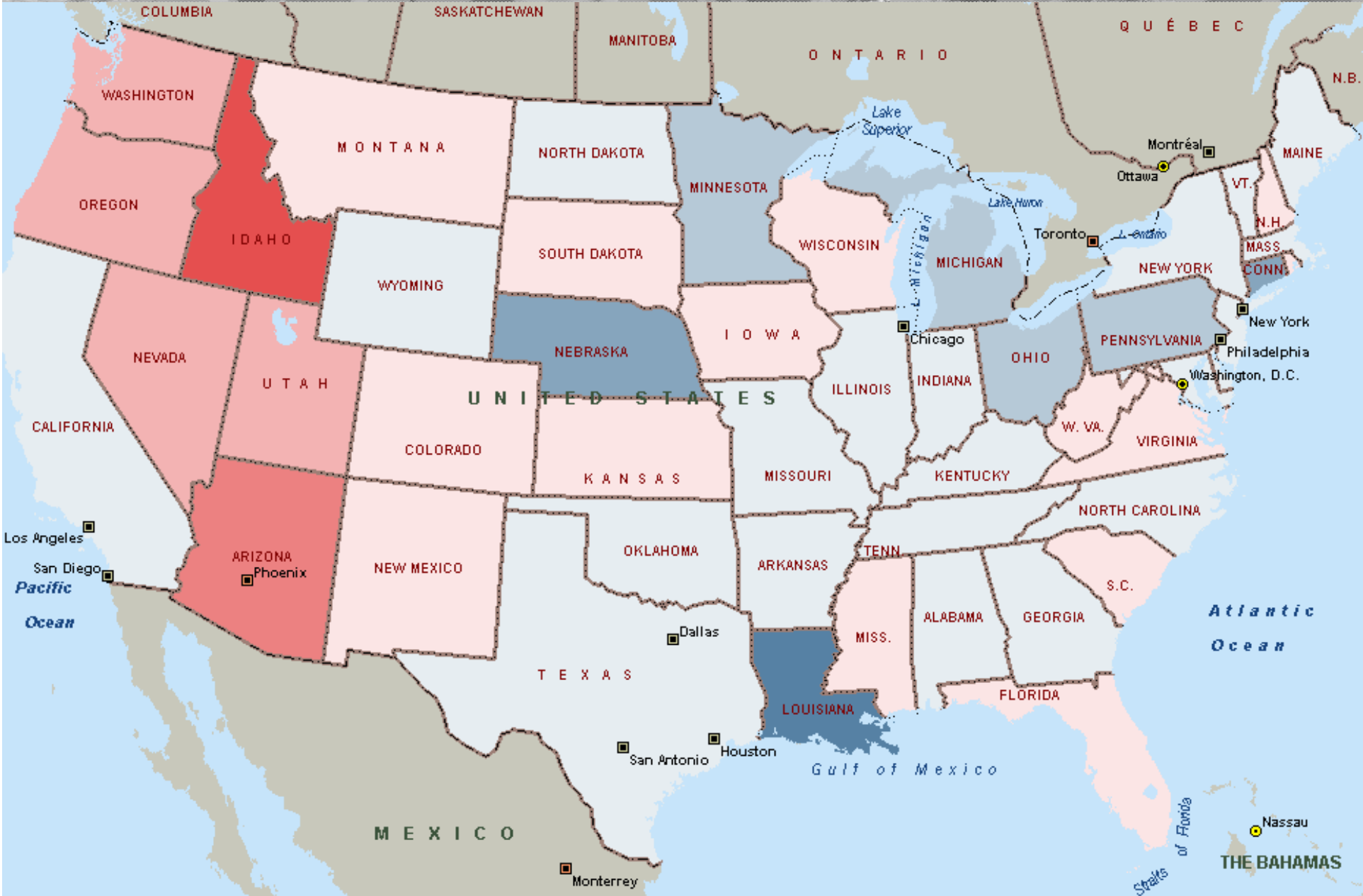
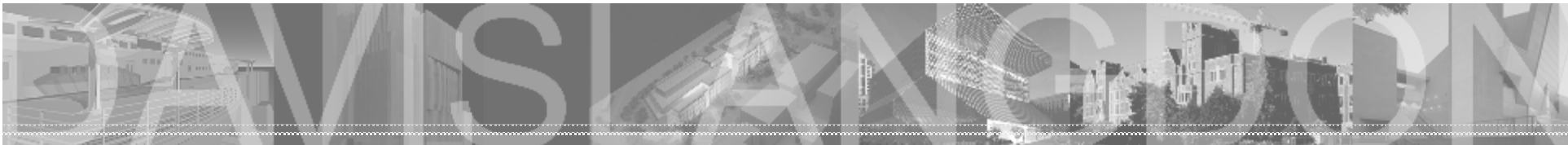


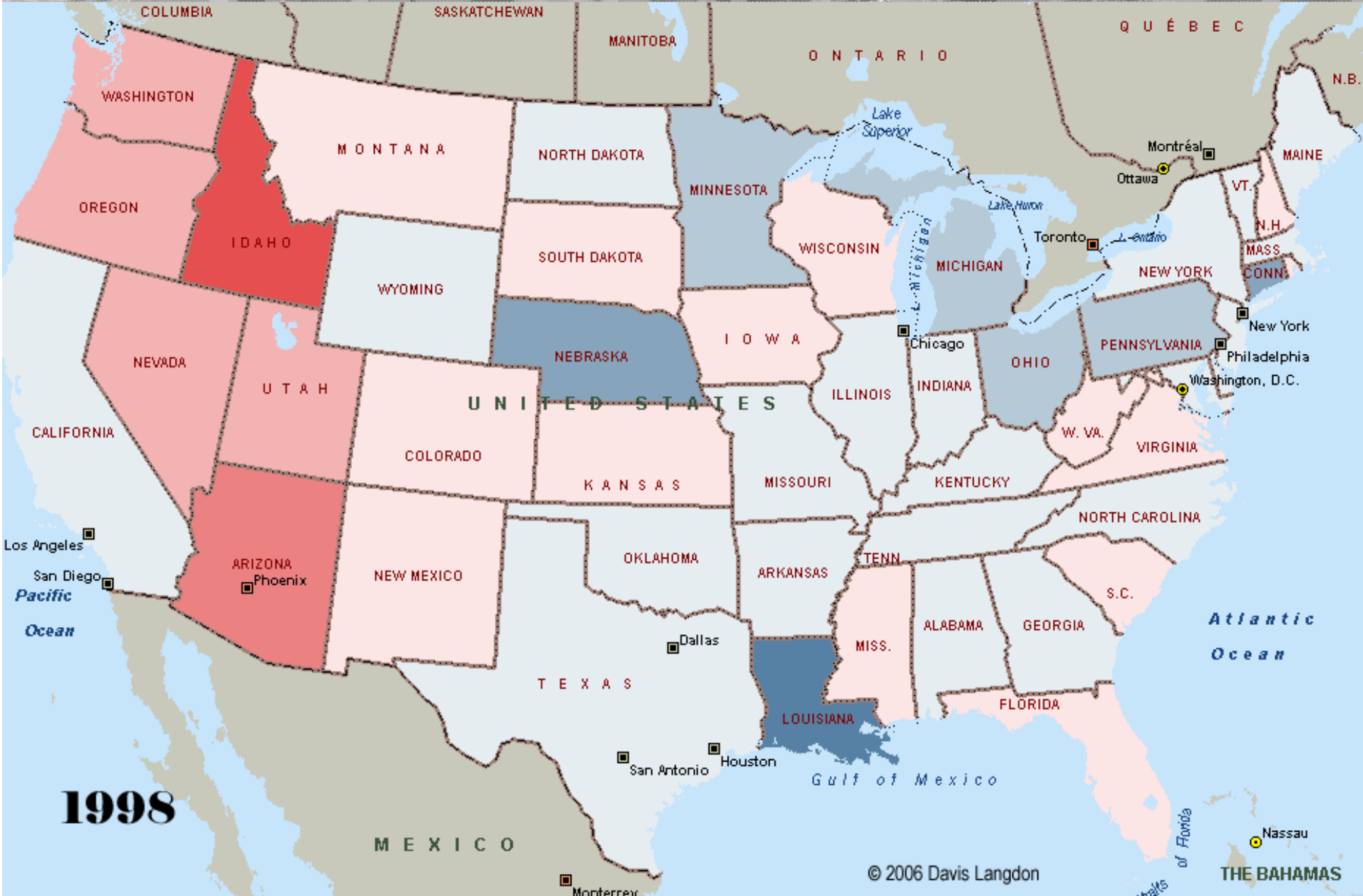
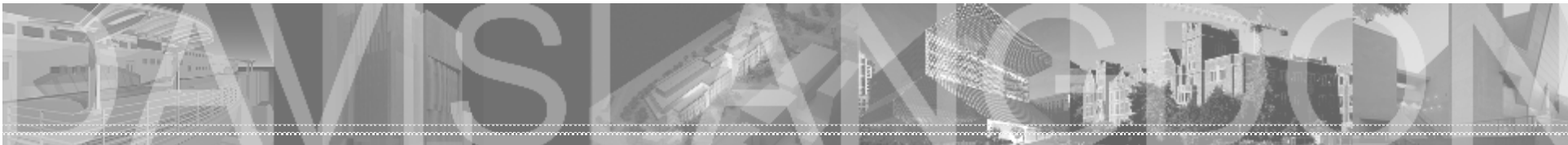


Managing Escalation

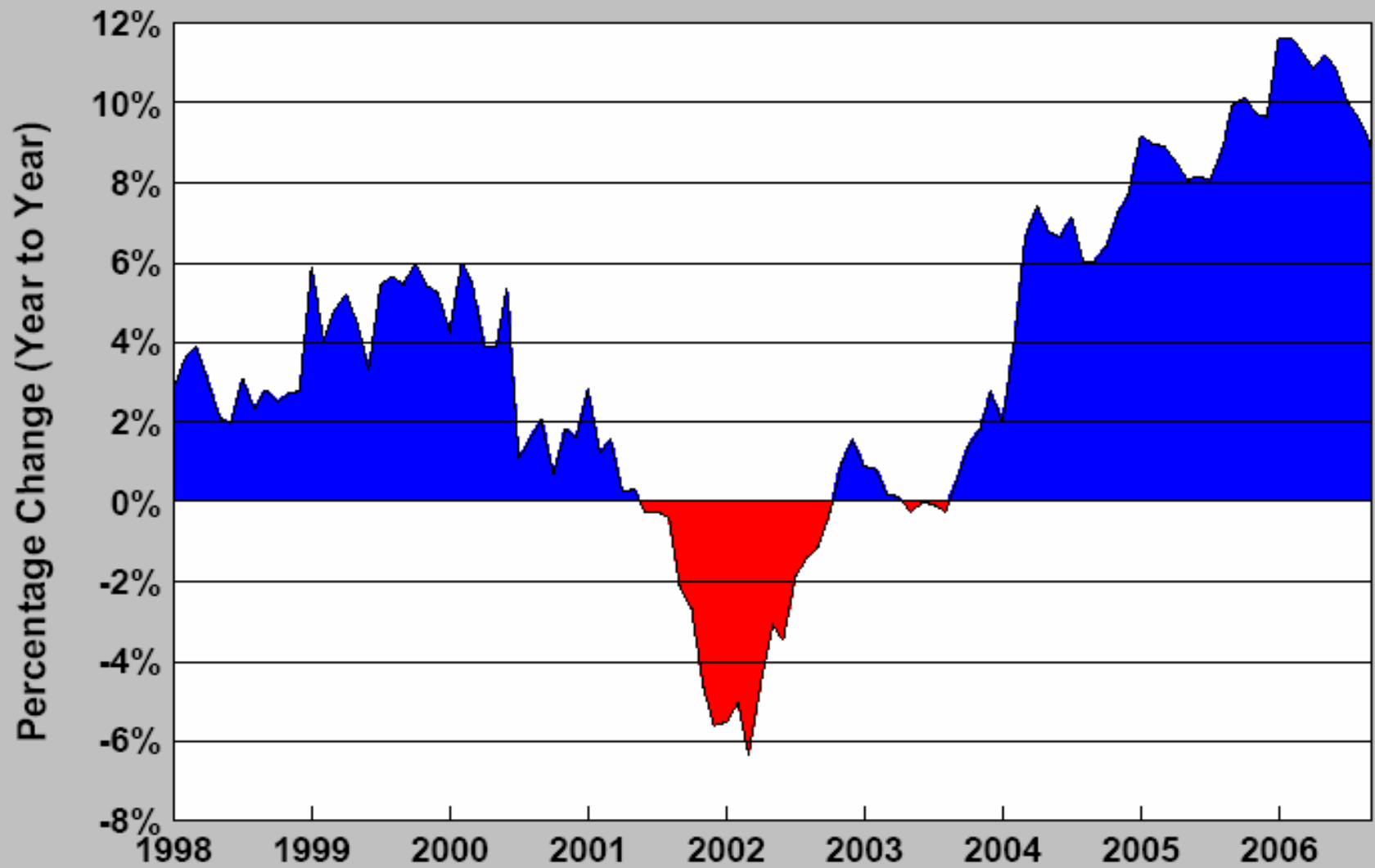
Construction Volume

- The reality:
 - Construction activity nationally has been fairly strong for several years
 - some regions have been extremely strong for many years.





Construction Employment Percent Change - Region 10 (Washington, Alaska, Idaho, Oregon)

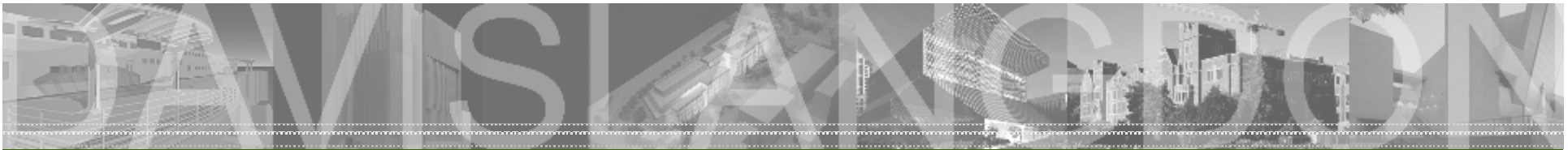




Managing Escalation

Construction Volume

- The reality:
 - Competition for construction workers is very high, especially for skilled workers and superintendents
 - Limited supply of qualified contractors & sub-contractors
 - Quality & performance suffer



Cost of Construction

Regulatory Climate

- The reality:
 - Natural disasters are likely to increase the regulatory burden
 - High volume of construction delays approvals
 - Regulations tend to increase over time
 - Gulf coast hurricane & flooding codes
 - Earthquakes



Managing Escalation

Escalation Summary

- Big Issues
 - Busy Contractors
 - High degree of uncertainty/risk
- Not so Big Issues
 - Natural Disasters
 - Material & Labor increases
- *Escalation impact is selective & variable*



Measuring Escalation

- Market volatility
 - Significant market fluctuations not covered by most indices
- Code changes
 - Code & practice changes not covered by most indices
- Tighter budgets
 - Less room to accommodate missed inflation



Managing Escalation

What can be done?

1. Recognize reality

- Materials prices are not going back
- Bidders have plenty of options, & may not be very interested in your projects
- Material prices are going to be volatile for some years
- Most contracts transfer the price risk to the subcontractor



Managing Escalation

What can be done?

2. Face reality

- There is a limit to available accuracy
- Uncertainty is here to stay
- We have to be smarter in what we do



Managing Escalation

What can be done?

3. Speak reality

- We have to communicate the truth to project teams
- Speak early, speak often
- Stop hiding behind
 - q China
 - q Katrina
 - q Oil
 - q US Exchange rate



Managing Escalation

What can be done?

4. Tackle reality

- Material price volatility
- Contractor capacity
- Labor availability
- Core escalation



Managing Escalation

What can be done?

Reduce the impact of material volatility

- Pre-purchase materials
- Use fluctuation clauses
- 'Cost plus' with target cost
- Dedicated float for material procurement
- Break contract into smaller packages
- Delay bidding non-essential packages
- Reduce bid award period to accommodate shorter price locks

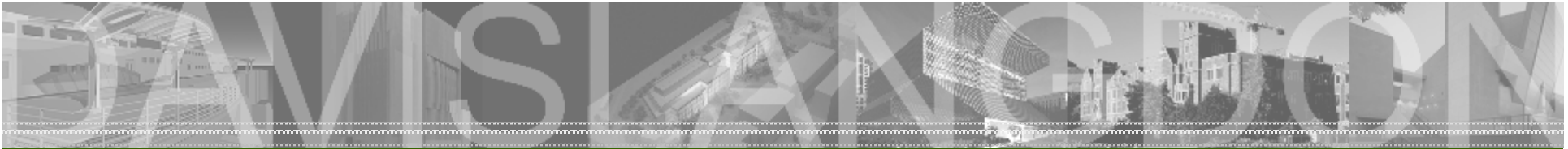


Managing Escalation

What can be done?

Reduce the impact of contractor capacity

- Be nice – prompt pay, resolve change orders
- Good documentation
- Eliminate/reduce complexity
- Build long term relationships
- Framework agreements/Indefinite Quantity Contracts



Managing Escalation

What can be done?

Reduce the impact of labor capacity

- Offsite fabrication
- Standardization
- Improve worksite environments



Managing Escalation

What can be done?

Reduce the impact of core escalation

- Accelerate schedules
- 4D/5D design software (BIM)
- Standardize
- Eliminate/reduce indecision masquerading as flexibility



Managing Escalation

Realign some of the A/E's risk

- Limit the redesign clause
- Recognize inflation during design
- Actively manage design & cost

Absorb some of the Program risk

- Develop program-wide contingencies/risk management protocols
- Redefine success
- Be willing to fail (occasionally)



Managing Escalation

Making Changes - This takes:

- Nerve
- Freedom of action at project level
- Some budget/contingency flexibility
- Committed leadership
- More work from project team
- New contract forms



Managing Escalation

Business as usual

- Transfers risk to the architect – redesign clauses
- Transfers risk to the contractor – hard money bids
- Transfers risks to project staff – performance expectations



Managing Escalation

Business as usual

- Consequences
 - Everyone who buys the risk will charge a premium
 - You may still not get the performance you bought



Managing Escalation

Conclusion:

- There are several inflationary factors at play
- Virtually no published index will pick these factors up
- Inflation will be higher and less predictable
- Quick & innovative responses are needed if the quality of construction is to be maintained.



Managing Escalation

- Discussion: