



# SKYLINE CONSTRUCTION

Current  
Construction  
Trends





# 2 MARKET TRENDS

## Title 24 CHEAT SHEET

### Important changes to the new Title 24 Standards



#### Tenant Improvements / Alterations in Existing Buildings

- TI's (including alterations / repairs) for any new construction requiring a building permit, to comply with the recently revised California 2013 Building Energy Efficiency Standards for Non-Residential Buildings
- Standards only apply to those portions of systems being altered; untouched portions need not comply



#### Envelope

- Added mandatory Roof insulation requirements and minimum insulation for demising walls



#### Mechanical

- Packaged units down to 6 tons must have the ability to modulate cooling capacity to 20% of max
- Reduced ability for HVAC systems to reheat conditioned air
- Increased chiller efficiency requirements.
- Increased cooling tower energy efficiency and water savings
- Added requirements for commercial boiler combustion controls
- Added acceptance tests for HVAC sensors and controls, including those for demand controlled ventilation
- Added efficiency requirements for small motors



#### Electrical

- Added mandatory requirement for receptacle controls in private offices, open office areas, reception lobbies, conference rooms, kitchens, and copy rooms to automatically shut off task lighting and other plug loads when the area is not occupied (Controlled Receptacles)
- Added mandatory requirement for electrical panels to be isolated by energy end use



#### Lighting

- If indoor, outdoor, or sign lighting alteration increases energy use of altered systems, alteration to comply
- Alterations that increase connected lighting load or replace more than 10 percent of the lighting fixtures (counting existing and new fixtures only in the enclosed spaces where light fixture alterations are proposed) to comply
- Alteration that replace more than 50% of the light fixtures to comply
- Replacement of parts of existing lighting (new ballasts or lamps) without replacing the entire fixture is not an alteration
- Lighting control systems to be acceptance tested for Title 24



# 2 MARKET TRENDS

## Title 24 C H E A T   S H E E T

A Design Review is to be done and Design Review Checklist and Certificates of Compliance completed as follows:

Less than 10,000 sq. ft.	Design Certificate(s) of Compliance may be completed by design engineer
10,000 sq. ft. to 50,000 sq. ft.	Design Certificate(s) of Compliance to be completed by in-house engineer not associated with the project
50,000+ sq. ft. w/ complex mechanical systems	Design Certificate(s) of Compliance to be completed by independent 3rd party

### Step 1: Design

Design team to ensure that specs comply w/ standards and that specs for energy features on construction documents are consistent w/ the Certificate(s) of Compliance.

### Step 2: Permit Application

Design team to ensure that the permit documents contain all of the information the Building Department will need to validate that the proposed work satisfies the requirements of the standards.

### Step 3: Plan Check

Building Department examines plans and Certificates of Compliance to ensure compliance with standards.

### Step 4: Construction

General Contractor to complete Certificate(s) of Installation verifying that the contractor is aware of the requirements of the standards, and that the actual construction meets the requirements.

### Step 5: Acceptance Commissioning

Commissioning will be required for all new nonresidential buildings equal to or greater than 10,000 sq. ft. Acceptance testing must be conducted and Certificates of Acceptance must be completed and submitted before the enforcement agency can issue the Certificate of Occupancy.

### Step 6: Operations

After construction, building must be correctly operated and maintained.



# 2 MARKET TRENDS

## SF COST TRENDS

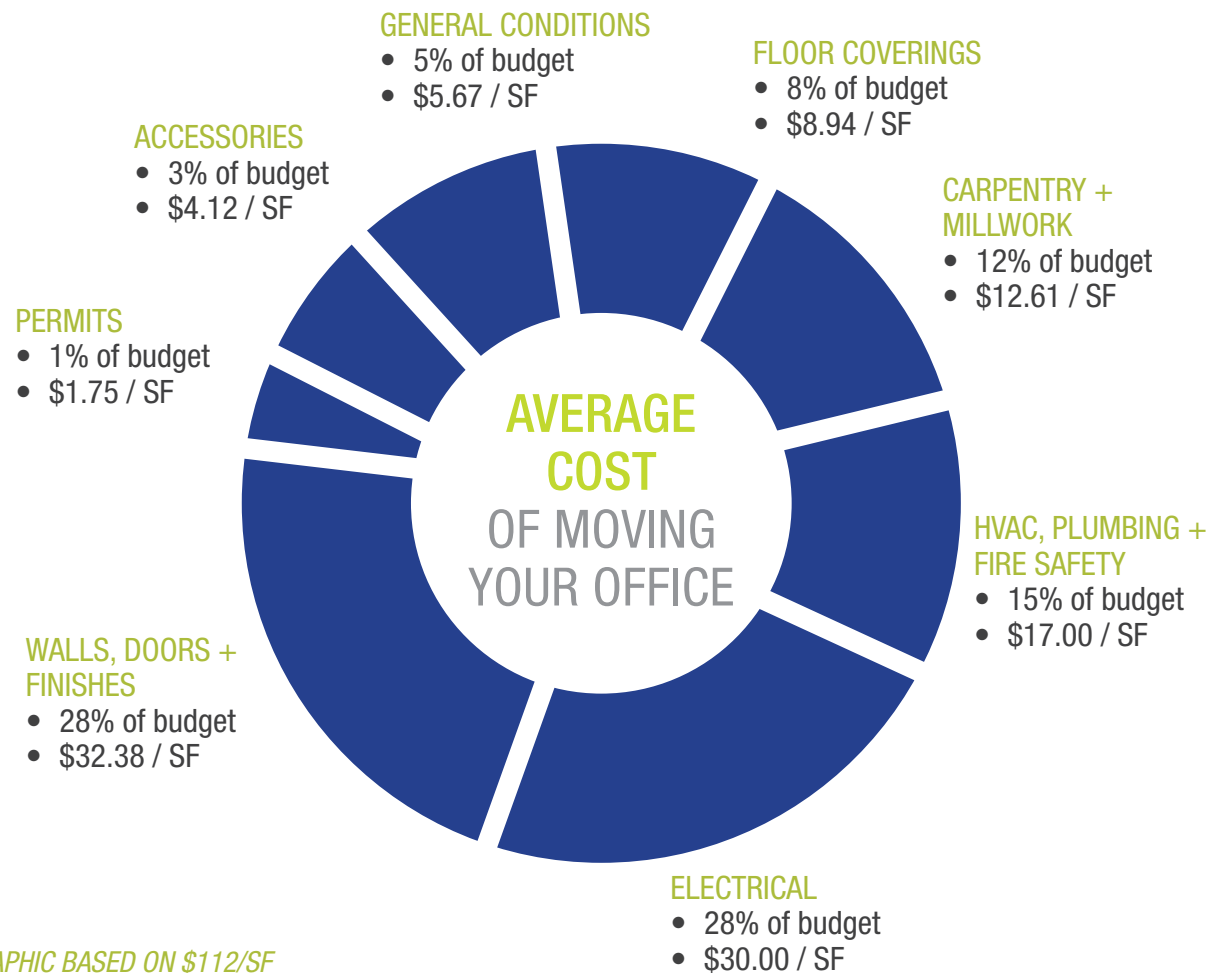
### San Francisco

Moderate Project Range: **\$70 - \$100**

Median Hard Cost: **\$80.50**

Luxury Project Range: **\$120 - \$175**

Median Hard Cost: **\$145.85**





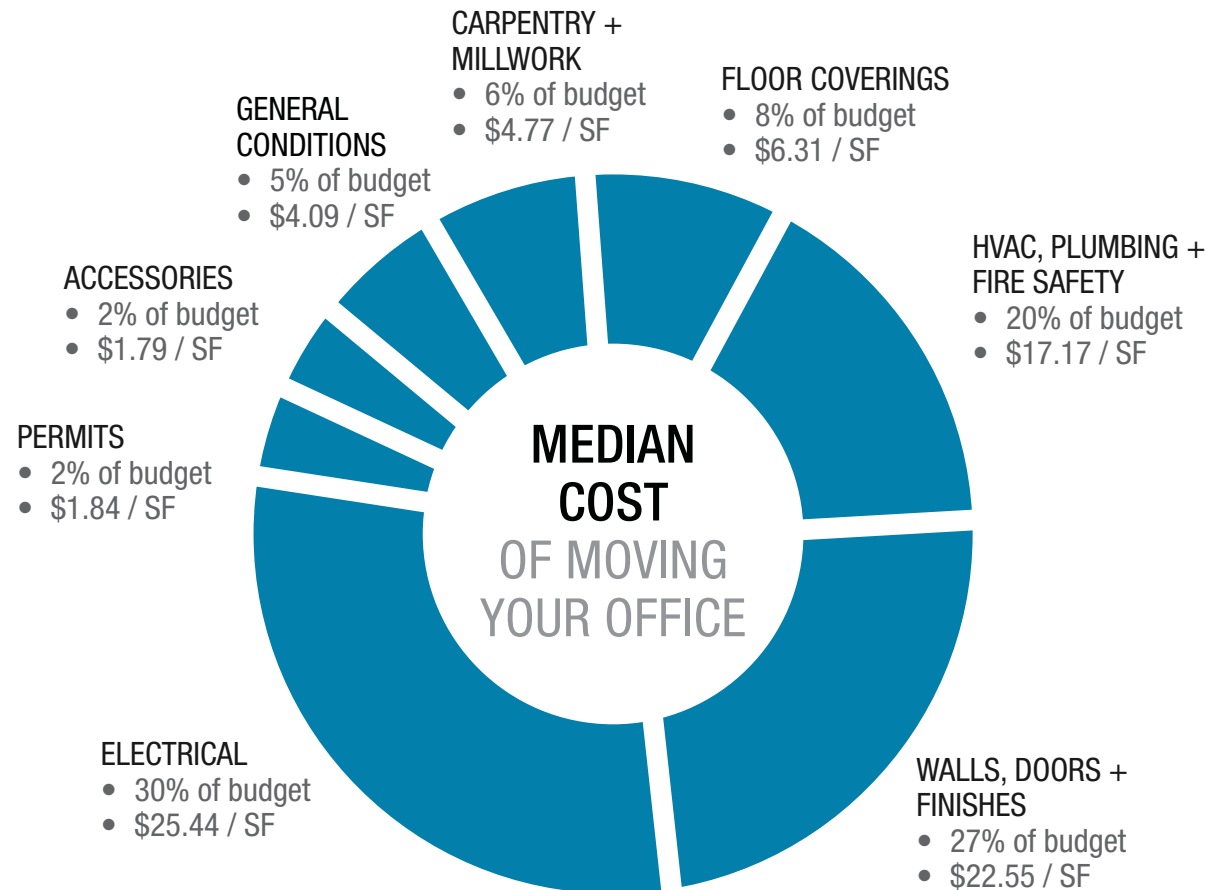
## 2 MARKET TRENDS

## SV COST TRENDS

### Silicon Valley

Project Range: **\$70 - \$100**

Median Hard Cost: **\$97**





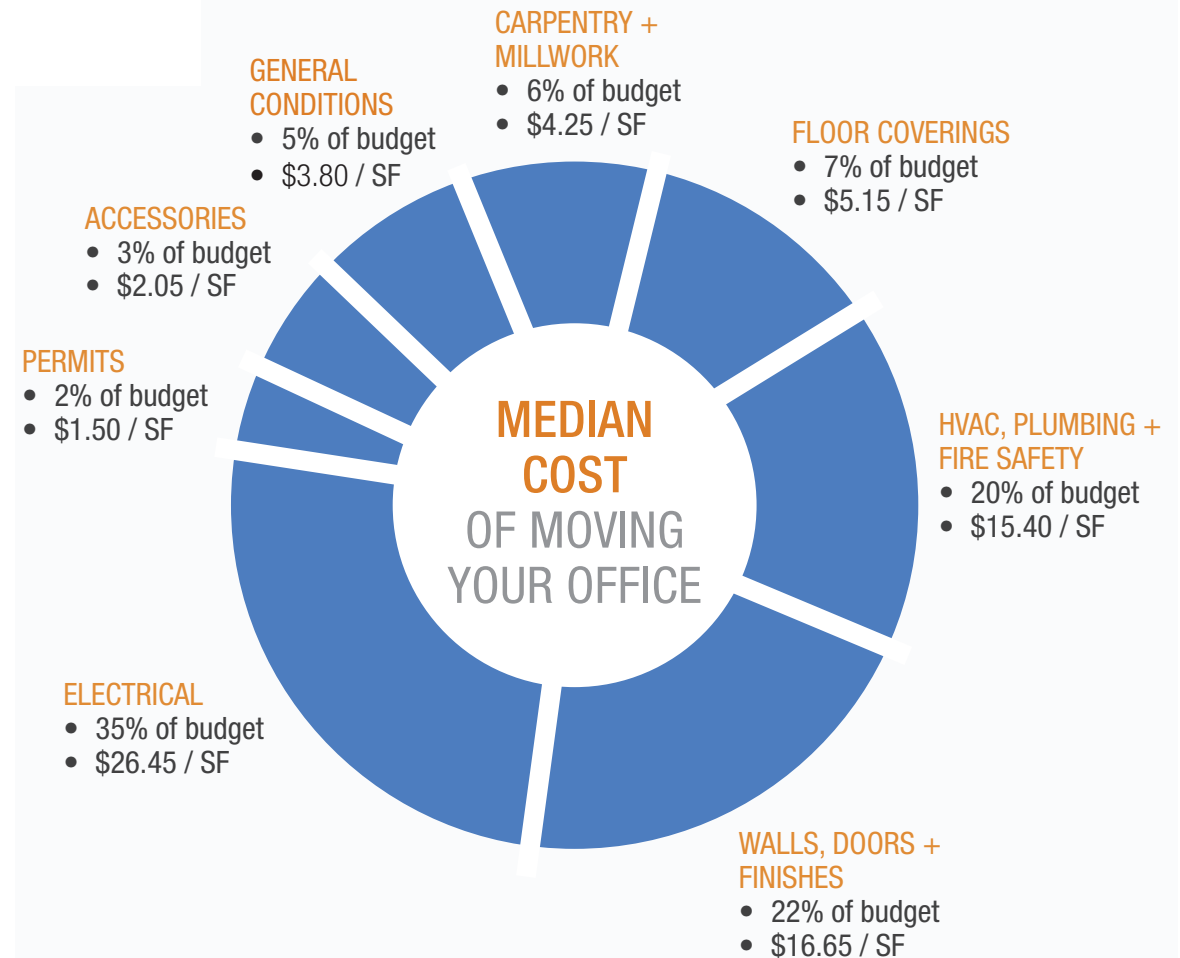
## 2 MARKET TRENDS

## EB COST TRENDS

### East Bay

Project Range: **\$70 - \$100**

Median Hard Cost: **\$79**





# 2 MARKET TRENDS

## COST ANALYSIS

### 2015 COST OBSERVATIONS

- Contrary to perception, margins are not increasing dramatically
- Unit productivity rates are increasing due to out-of-town labor
- Lost productivity due to manpower staffing (i.e. working a crew 7 days per week as resources are not available for second or night shift)
- Labor costs are increasing due to demand for qualified personnel (demand is such that some firms are pulling from out-of-state)
- Very aggressive schedules increasing expediting and OT costs
- More liquidated damages in contracts which increases GC risk and administration
- Given dynamic market, GC's and subcontractors are being more selective in the work that they pursue
- Title 24 will continue to impact pricing
- Payment terms are increasing which increase finance costs (i.e. standard payment terms have gone from 30 to 45 days)

# 2 MARKET TRENDS

## COST ANALYSIS

### 2016 COST ANTICIPATION

- Due to demand for personnel, labor costs will continue to be an issue
- As contracts get more onerous, risk dollars will increase
- Quality of drawings and coordination issues will continue to impact pricing
- As economy continues to strengthen nationally, continued pressure on material deliveries especially if schedules continue their aggressive trend.







## 2 MARKET TRENDS

### LABOR TRENDS

#### LARGE PROJECTS CREATING RESOURCE CONSTRAINTS

- Lucile Packard Children's Hospital, \$1.1 billion, 2016
- Transbay Transit Center, \$994 million, 2017
- SF Airport Multiple Projects, \$721 million, 2016-2019
- 181 Fremont Office Tower, \$640 million, 2016
- Salesforce Tower, \$450 million, 2016
- Stanford University Projects, \$155 million, 2016
- The Cove at Oyster Point, \$100 million, 2016
- Facebook, \$85 million, 2016
- Bay Meadows, \$85 million, 2017
- 350 Bush Office Tower, \$110 million, 2017

# 2 MARKET TRENDS

## LABOR TRENDS

### LABOR + TRADE TRENDS

- Most constrained trades: MILLWORK, GLAZING, MEP, LANDSCAPING
- Subs are becoming very selective due to limited availability – prequalifying prospects to see if it's worth their time

### TRADE MARKET ISSUES

#### Carpet

- 8-9 week minimum = 1 week for sub submittals, 6-7+ weeks for production, 1 week for shipping
- Class A carpet specifications changed from 80% broadloom 20% tile to 20% broadloom 80% tile, installation has also changed as a result
- Large number of “standard” SKU products offered by each mill impacts readily available inventory (i.e.: Interface offers 10,000+ colors, patterns and backings)
- To lower costs Interface, Tandus, Shaw and Mohawk produce their own fiber - reducing cost but compromising long term quality and appearance
- Polished concrete is very common - area for further education and discussion

#### Electrical

- 4% increase in material costs per year, excluding copper
- Expect to see the same inflation we saw in materials over next 3-4 years based on CBA
- Expect the market to be crazy busy for next 24 – 36 months and after that, not so clear.
- Title 24 forces a \$4–6 / sf addition to current cost assumptions





## 2 MARKET TRENDS

### LIGHTING TRENDS

#### LIGHTING LEAD TIME TRENDS

1. **Lighting specification** is not fully complete at 100% Construction Documents. Colors, temperatures, fit into ceilings are not resolved prior to bid. The contractor is expected to ensure that the fixture is fully compatible with the install prior to releasing. This is done concurrently with fire alarm, setting up the job, buying out commodities, UPS, etc.
2. **Lighting selection.** The fixture schedule is just used as a basis of award, and not necessarily the final selected product. We still need to wait for the final selected product. Goes hand in hand with item 1.
3. **Lighting control (Title 24)** is not fully designed. Lighting control is now driving fixture drivers. Each lighting control vendor has a different compatibility issue with lighting that is not fully flushed out. i.e. 0-10V lighting control requires a different system than a Lutron based, or coordinating Enlighted or nLight driver.
4. **Submittal process.** We always recommend design meetings with the Owner, Architect, Contractor and Lighting Designer. This helps smooth the process for submittal approval.

# 2 MARKET TRENDS

## LIGHTING TRENDS

### LIGHTING LEAD TIME TRENDS

5. **Lighting representatives.** The (4) major lighting reps are absolutely slammed. Every project practically runs through them. So unlike having 8-10 electrical contractors at your disposal, only (4) lighting reps do ALL projects throughout the Bay Area regardless of union, non-union or who the electrical contractor is. Each representative has various levels of expertise and support with each manufacturer that can help/ hinder the process.
6. **Manufacturing.** Manufacturing is stretched for both control and fixtures among the 3 LED manufacturers. Markets are getting hotter in DC, SF, Seattle, Chicago and NYC, with LA coming on strong. Manufacturing is limited by LED quality in China. They are having a hard time making and achieving their lead times.
7. **Lead time accuracy.** Many manufacturers give an estimated lead time that is represents fabrication only after their release however the team needs to be cognizant that while a representative may quote a 6-8 week lead time, when we add 1 week for submittal approval and 2 weeks for delivery, lead times are more like 9-11 weeks unless there is total focus by the supply chain (starting at specification) or it is a very local product (like Finelite).





# 2 MARKET TRENDS

## LIGHTING TRENDS

### OUR RECOMMENDATIONS

1. Early selection and thorough specification of package by Architect / Lighting Consultant, including ceiling coordination. Notes saying 'contractor to coordinate' should be eliminated
2. Earlier selection of general contractor and electrical contractor to permit submittal process in a timely manner to meet the schedule
3. With early selection of electrical contractor, drive toward an efficient lighting control system that complements the fixture package
4. Great communication with reps / manufacturers



# 2 MARKET TRENDS

## SCHEDULE TRENDS

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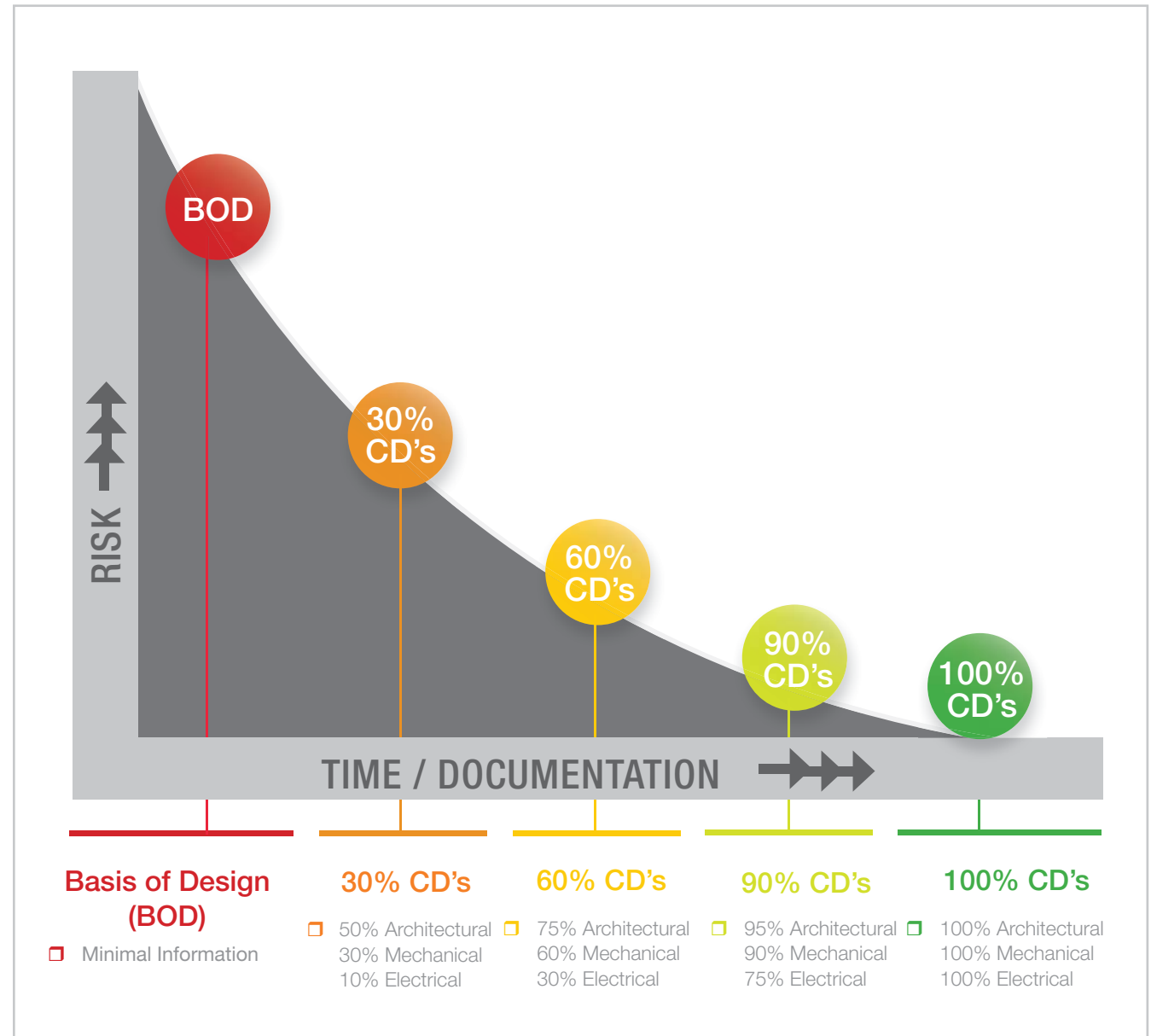
- Schedules are becoming more aggressive yet equipment / material deliveries are not accelerating in a commensurate timeframe
- Permit / construction activities are overlapping, pushing the envelope of what cities will accept
- Long lead items
  - Light Fixtures (10+ weeks)
  - Specialty glass such as green glass (10+ weeks)
  - Carpet (10+ weeks)
  - Specialty ceramic tile / stone: i.e. Atlas Concorde 12"x24" tile, 12 week lead time from Italy (factory is closed during September), have seen tiles from China and Japan
  - 3-Form Millwork (12-week lead time)
  - Specialty doors (i.e. WON Doors)
  - Suspended Ceiling: Hunter Douglas, Tavola Levels, 824 Walnut no perforation, 15/16" grid (12 weeks) and/or specialty ceilings
  - Mechanical equipment (varies depending on equipment)
  - PG&E (gas meters, new | upgraded electrical service)







# 3 ARCHITECT + CONTRACTOR COMMUNICATION



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## ADVICE TO MEET TIGHT BUDGETS + SCHEDULES

### BIDDING

- GC's and subcontractors are busy - expend their time where they have a high probability of success and are bidding against like firms
- Match GC's with project - not every GC is right for every project
- Interview GC's to ensure project team compatibility
- Select a GC as a "partner" - engage GC early so that long lead equipment / materials can be identified and pre-purchased to meet aggressive project schedules
- Hard bids: keep in mind, GC's and subs are going to bid the drawings





# 3 ARCHITECT + CONTRACTOR COMMUNICATION

## ADVICE TO MEET TIGHT BUDGETS + SCHEDULES

### DESIGN

- Ensure project team does thorough site review and investigation. Utilize GC to assist with site investigations
- Avoid notes such as “contractor to verify” throughout drawings
- Set realistic budgets and timeframes
- Take advantage of GC’s experience for constructability reviews, material selection, equipment maintainability, etc...
- Validate lead times and pricing with GC and not simply with distributor
- Provide appropriate level details (roofing details; waterproofing requirements, etc.)
- Consider special approvals such as:
  - Commercial Kitchens: Health Department
  - Generators for Server Rooms: BAAQMD
  - Planning approvals
  - Hoisting activities: SF downtown restrictions

# 3 ARCHITECT + CONTRACTOR COMMUNICATION

## ADVICE TO MEET TIGHT BUDGETS + SCHEDULES

### CONSTRUCTION

- Understand permit timeframes, constraints and jurisdictional requirements and which work can be done concurrent with permitting
- Have formal internal and project team design coordination meetings
- Avoid the use of non-qualified “owner” subcontractors to lower budget
- Avoid significant changes or material changes during construction
- Integrate design into construction process (participate in weekly OAC meetings, walk the site, collaboratively discuss RFI's, avoid changes to design team)





# 4 LESSONS LEARNED ON THE JOBSITE

## 5 TOP LESSONS LEARNED

1. **Site Validation:** Implementation issues during construction due to: lack of field validation prior to design / too much reliance on as-built drawings / too many references to “contractor to verify”
2. **Design Coordination:** Lack of thorough design coordination of drawings / specifications and too much reliance on GC for drawing coordination via their review and comments. More up front coordination from Data / IT / AV / Security / Furniture vendors so architectural drawings include all scopes.
3. **Drawing Details:** Lack of details on drawings (i.e. recent examples include waterproofing details, roofing details, glazing / framing details, ceramic ceiling tile installation, etc.)
4. **Material Selections:** Timing of fixture / material selections. All too often it seems as though fixture schedule is just used as a basis of award and not necessarily the final selected product.
5. **Project Schedules:** Extremely aggressive and in some cases unrealistic construction schedules.

