

# Real-Time Bid Optimization Document

## Budget

**Total Budget:** \$500,000

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## Requirements

- High-quality materials
  - Timely project completion
  - Compliance with safety standards
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## Type of Project

**Project Type:** Commercial Building Construction

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## Tender Details

### 1. Tender A

- **Price:** \$450,000
- **Materials:** Steel & Concrete
- **Bidder:** Company A

## Material Quality Assessment:

- **Steel:**
  - **Specifications:** Must comply with ASTM A36 (structural steel).
  - **Quality Indicators:**
    - Yield strength: Minimum of 36 ksi.
    - Ductility: Crucial for maintaining structural integrity.
    - Corrosion resistance: Necessary for long-term durability.
- **Concrete:**
  - **Specifications:** Must meet ASTM C150 for Portland cement and ASTM C33 for aggregates.
  - **Quality Indicators:**
    - Compressive strength: Minimum of 3,000 psi for structural applications.
    - Aggregate quality: Low crushing value (maximum 30% for wearing surfaces) and free from deleterious materials.

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## 2. Tender B

- **Price:** \$480,000
- **Materials:** Steel & Wood
- **Bidder:** Company B

### Material Quality Assessment:

- **Steel:**
  - **Specifications:** Must comply with ASTM A36 (structural steel).
  - **Quality Indicators:**
    - Yield strength: Minimum of 36 ksi.
    - Ductility: Essential for maintaining structural integrity.
    - Corrosion resistance: Required for longevity.
- **Wood:**
  - **Specifications:** Must comply with ASTM D198 for structural lumber.
  - **Quality Indicators:**
    - Moisture content: Ideally less than 19% for structural applications.
    - Species grading: Preference for strong species such as Southern Yellow Pine.
    - Treatment: Must be treated for resistance against decay and insect damage.

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## 3. Tender C

- **Price:** \$470,000
- **Materials:** Steel & Glass
- **Bidder:** Company C

### Material Quality Assessment:

- **Steel:**
  - **Specifications:** Must comply with ASTM A36 (structural steel).
  - **Quality Indicators:**
    - Yield strength: Minimum of 36 ksi.
    - Ductility: Essential for structural soundness.
    - Corrosion resistance: Mandatory for durability.
- **Glass:**
  - **Specifications:** Must comply with ASTM C1036 for flat glass and ASTM C1401 for laminated glass.
  - **Quality Indicators:**
    - Thickness: Must meet safety standards.

- Safety ratings: Tempered or laminated glass required for impact resistance.
  - Thermal expansion: Must exhibit low thermal expansion to prevent stress under temperature fluctuations.
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