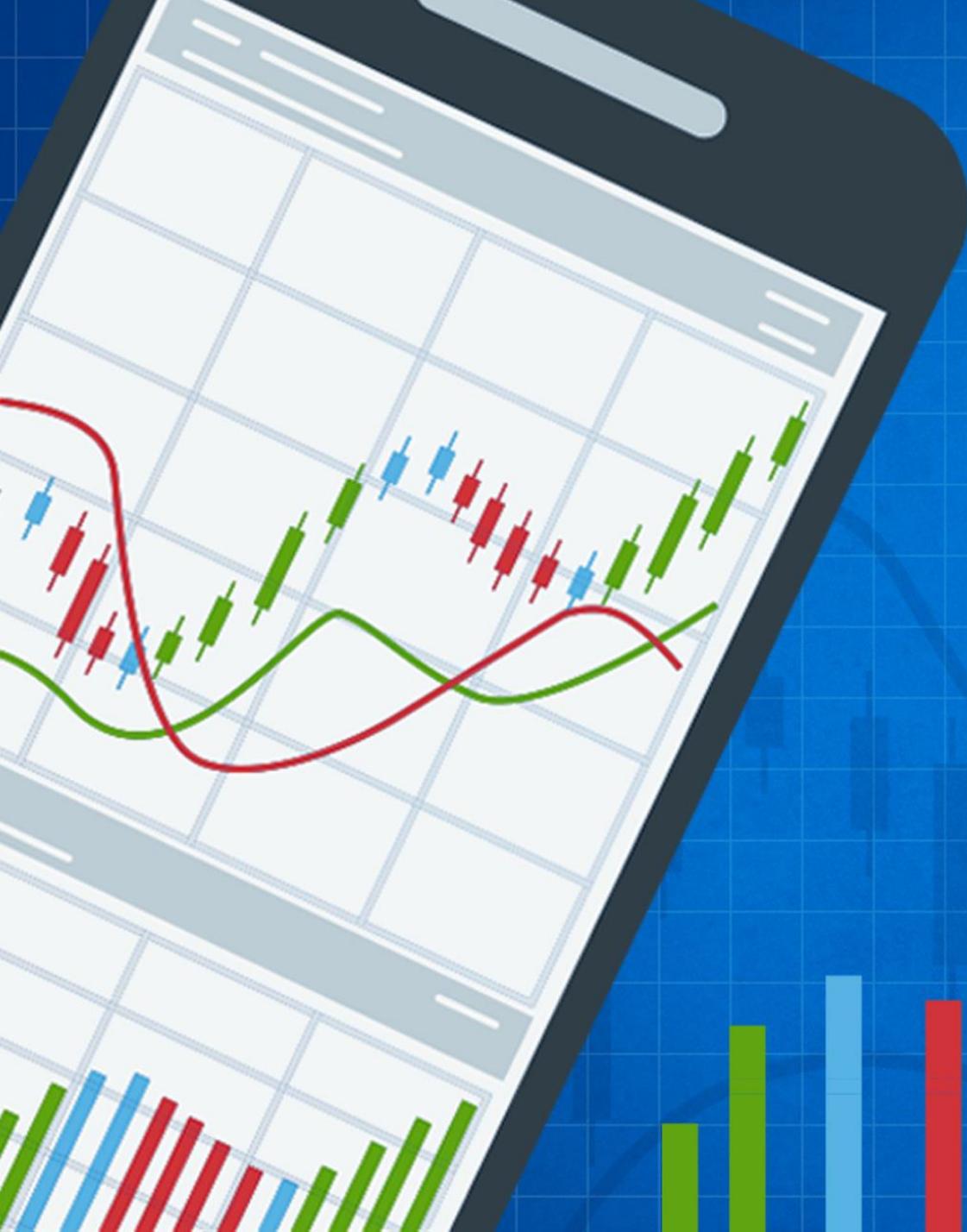


GARDIAN® Webinar

Construction *Cost Trends* 2018



Today's Topics

- Data Overview
- Materials and Locations
- Industry Update
- Q&A

Presenters



Noam Reininger

Chief Data Officer
Gordian



Bob Mewis

Director of Engineering
& Production, RSMeans data
Gordian



Geni Medeiros

Research Manager,
RSMeans data
Gordian



Tim Duggan

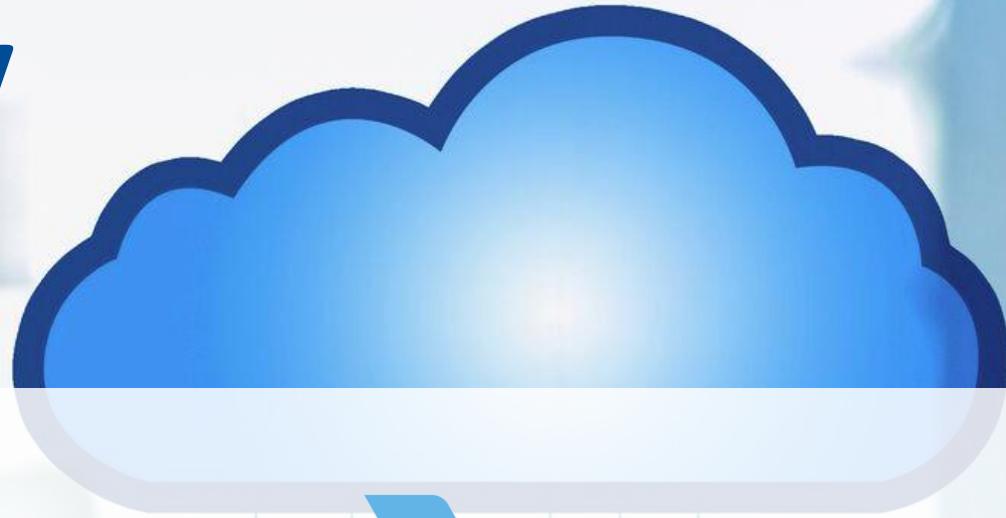
Director of Analytics,
RSMeans data
Gordian

Introduction



Technology

Investing in cloud technology



Increase data and efficiency



Data Science

Investment in data science and AI



Better data and predict future construction costs

External Datasets

Merge RSMeans data
with external datasets



Statistical control, data
quality and fidelity

Gordian's Data Organization

Produces high quality, accurate and local construction cost data

Research

Engineering

Analytics

Quality Assurance & Delivery

Gordian's Data Organization

Research

Construction Cost
Researchers who
source local material,
labor and equipment
pricing.

Gordian's Data Organization

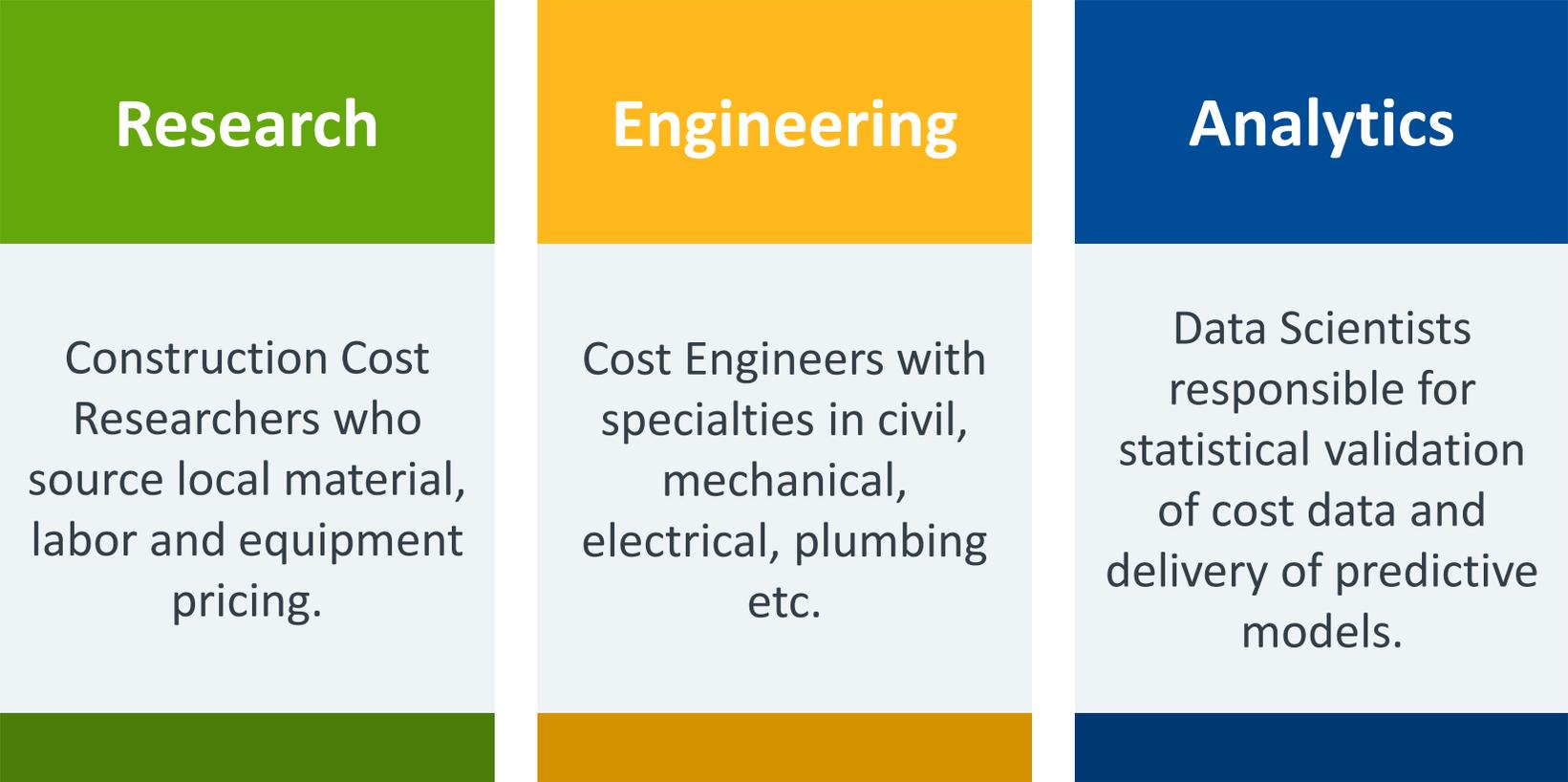
Research

Construction Cost Researchers who source local material, labor and equipment pricing.

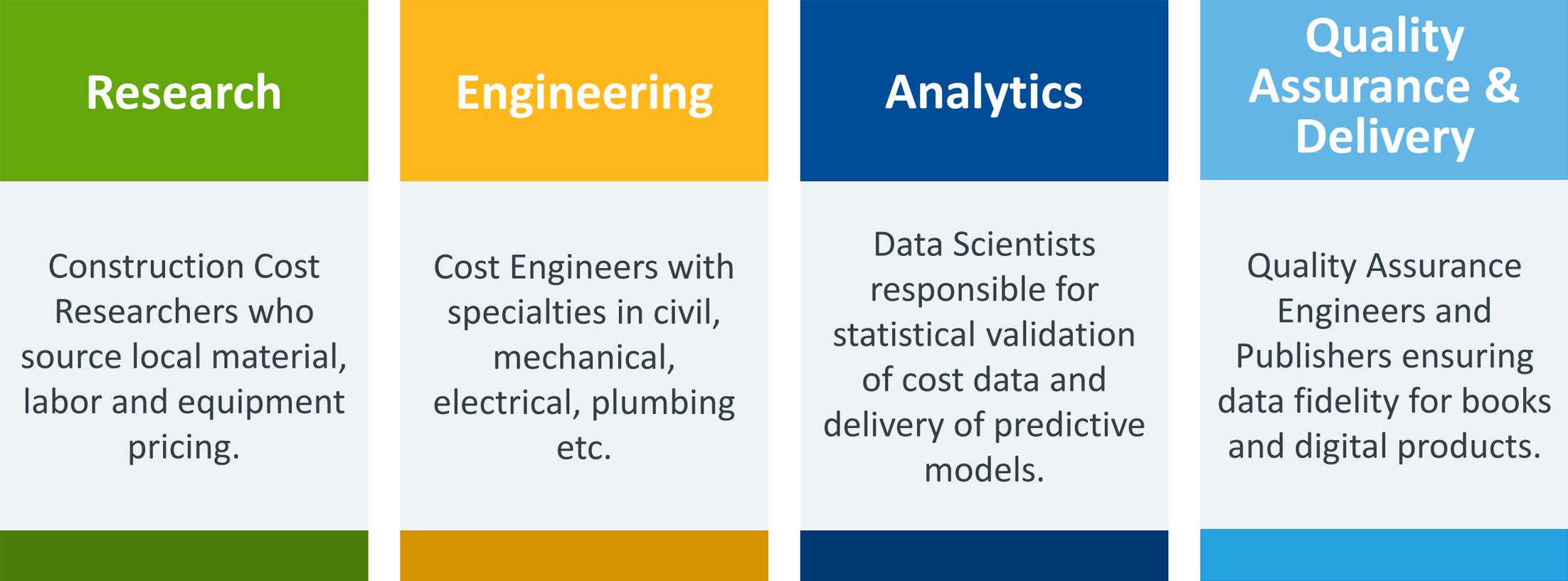
Engineering

Cost Engineers with specialties in civil, mechanical, electrical, plumbing etc.

Gordian's Data Organization



Gordian's Data Organization



Gordian's Data Organization

Research

Engineering

Analytics

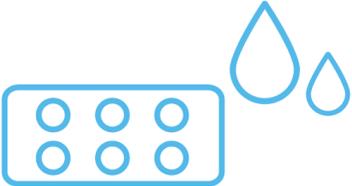
Quality
Assurance &
Delivery

**500+ years
construction experience**

Construction Data Overview



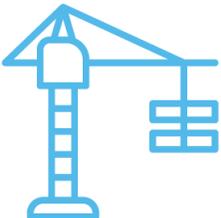
Unit Cost Line Items



Material



Labor



Equipment



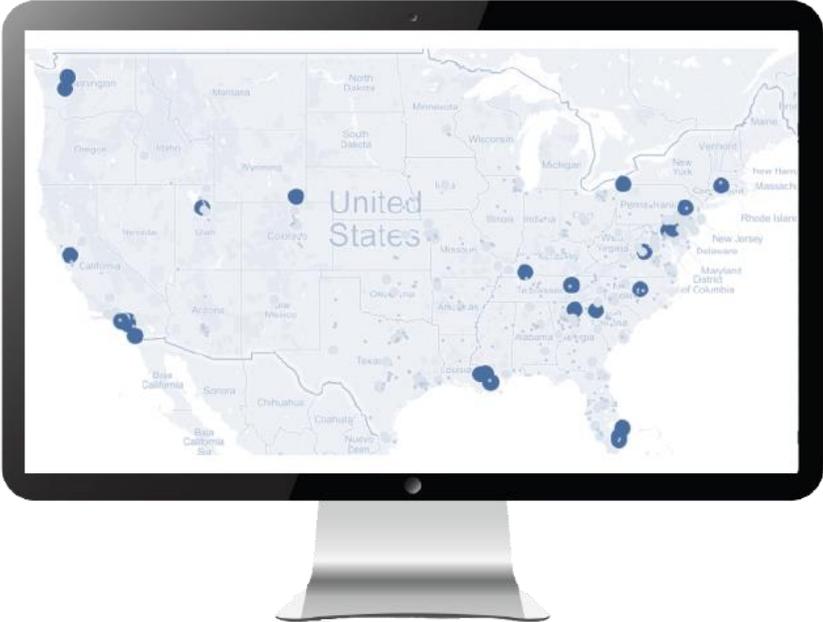
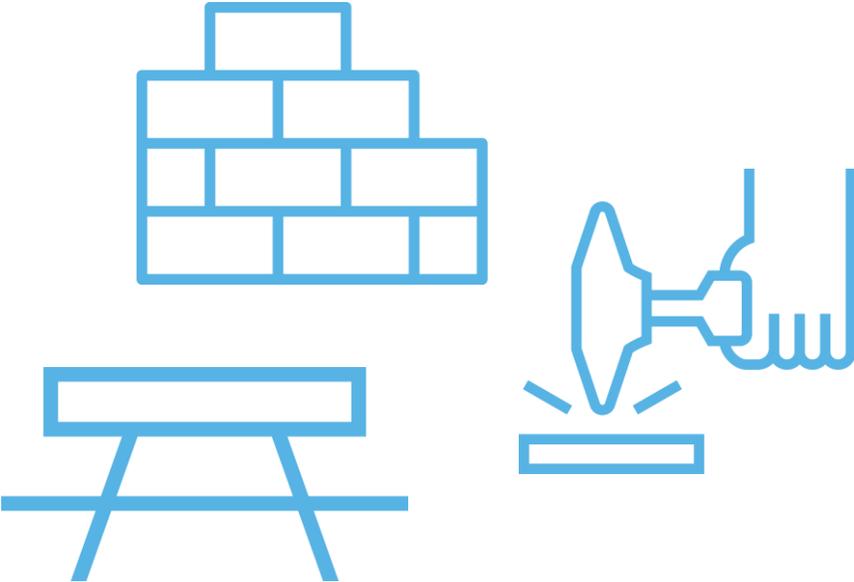
Productivity



Unit Cost Line Item

Materials

54,000+ construction materials



Labor

Collect wage rates for:



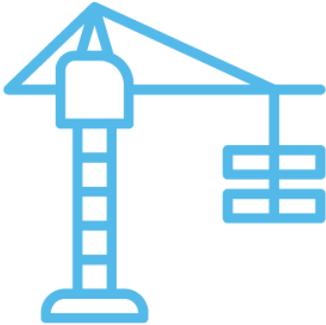
Union

Open Shop

Residential

Equipment

Add average markups:



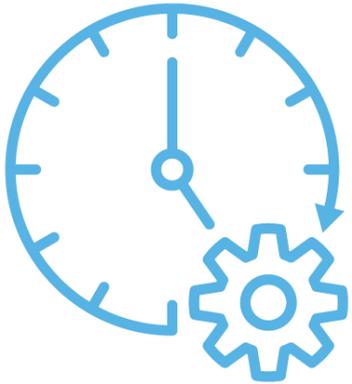
Workers
compensation
insurance

Home office
overhead

Profit

Productivity

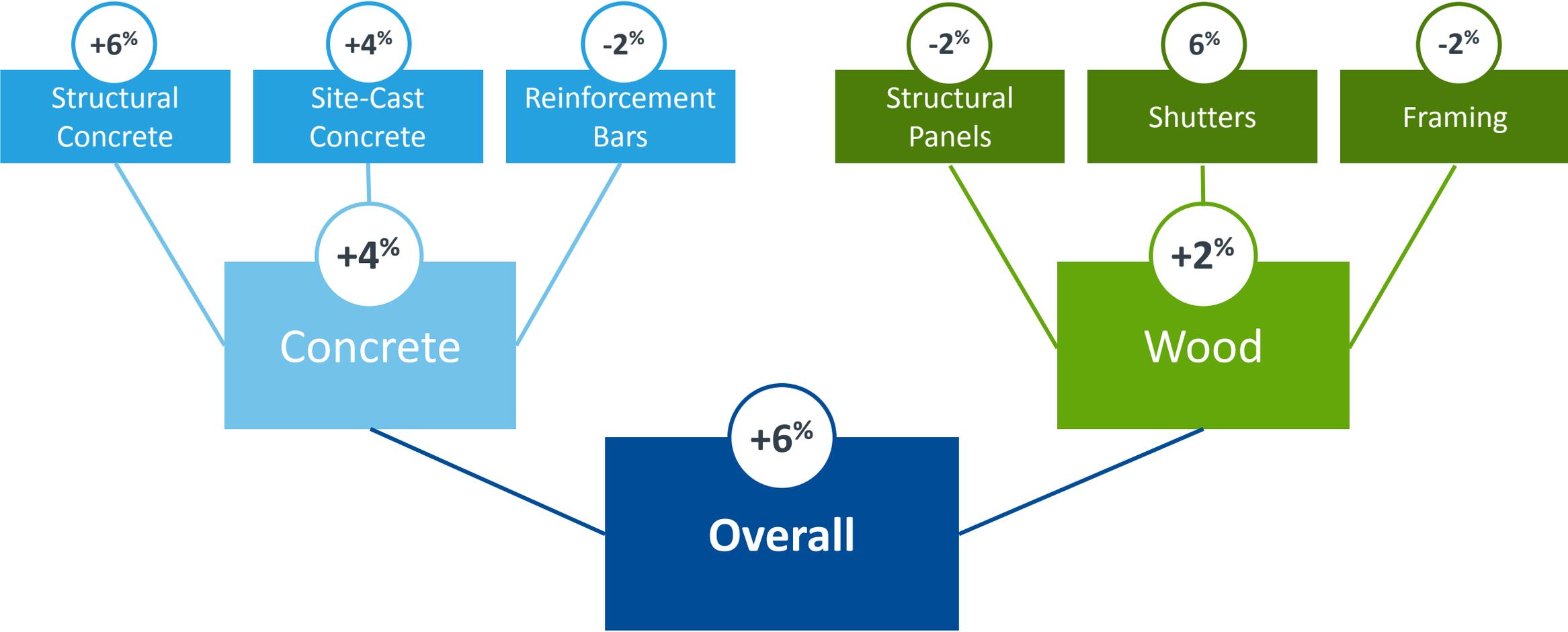
How much work can be done?



Collect &
evaluate data

Integrate into
unit cost

Changes in the Data (EXAMPLE)



RSMeans data Changes from 2017-18

Construction cost database contains 88,667 Unit Cost Line items

1,236 new cost lines have been added.



87 cost lines have been removed.



RSMMeans data Changes from 2017-18



854
cost lines have a
description change.

Changes from 2017-18

71% of cost lines have a price change.

Steel.....\$	↑
Concrete.....\$	↓
Lumber.....\$	
Copper Wire.....\$	

66%
changed between
-5% to 5%

29% of cost lines have a price change of more than **5%**



Materials and Locations



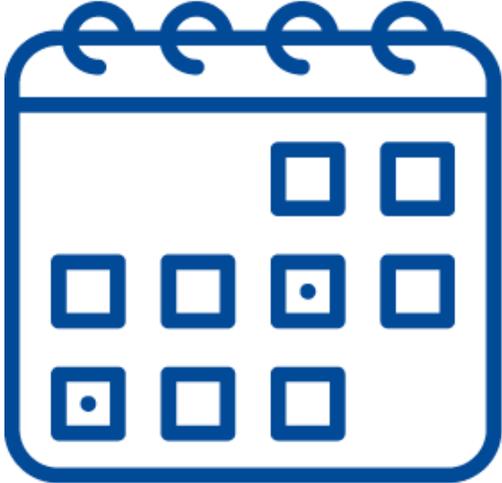
Reasons for Material Cost Changes



Availability



Location



Time of year

Biggest Material Cost Changes



Lumber



**Some areas experienced a
26% increase year over year**

Updating Cost Indexes



Cost Indexes

City Cost Indexes (CCI)

Historical Cost Indexes

Cost Indexes

City Cost Indexes (CCI)

- Location factors
- Compare one city's costs to the national average
- Must be used within current year

Historical Cost Indexes

Cost Indexes

City Cost Indexes (CCI)

- Location factors
- Compare one city's costs to the national average
- Must be used within current year

Historical Cost Indexes

- Construction cost indexes
- Relationship of a city's cost to the national average over time
- Shows historical cost trends

Using the Indexes

Highest Change by City:

1. **Richmond, VA**
2. Fargo, ND
3. Elizabeth City, NC
4. Twin Falls, ID
5. Shreveport, LA
6. Sioux Falls, ND
7. Lynchburg, VA
8. Wenatchee, WA
9. Augusta, ME
10. Kittery, ME

Lowest Change by City:

1. **West Palm Beach, FL**
2. Pine Bluff, AR
3. Tyler, TX
4. Youngstown, OH
5. Miami, FL
6. Lakeland, FL
7. McAllen, TX
8. Jackson, MS
9. Tampa, FL
10. Corpus Christi, TX

Cost Index Factors

- Material prices
- Equipment rental rates
- Diesel fuel costs
- Trade wages

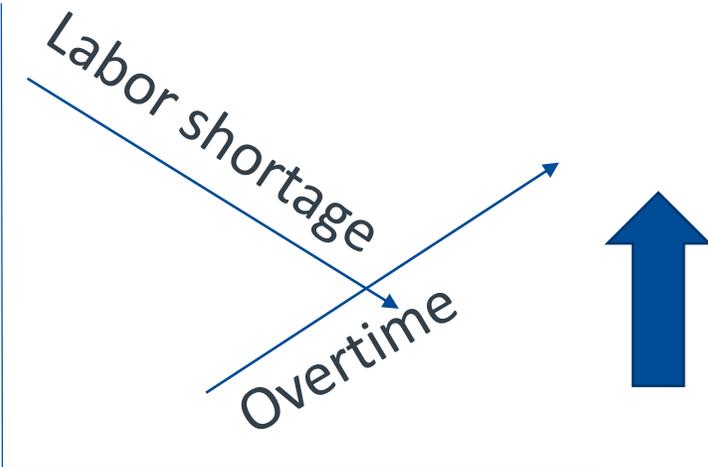
Effects of Natural Disasters



Open Shop Wages



Union Wages

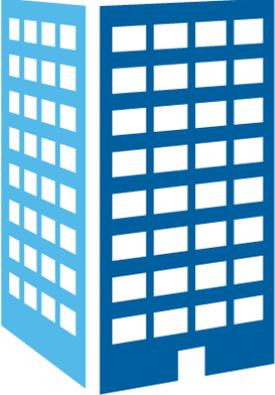


Overall Project Cost

Industry Update



RSMeans data Models



100+ Square
Foot Models



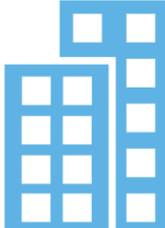
Healthcare



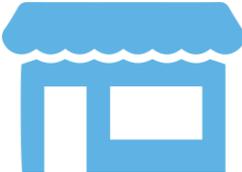
Education



State, Local
and Federal
Government



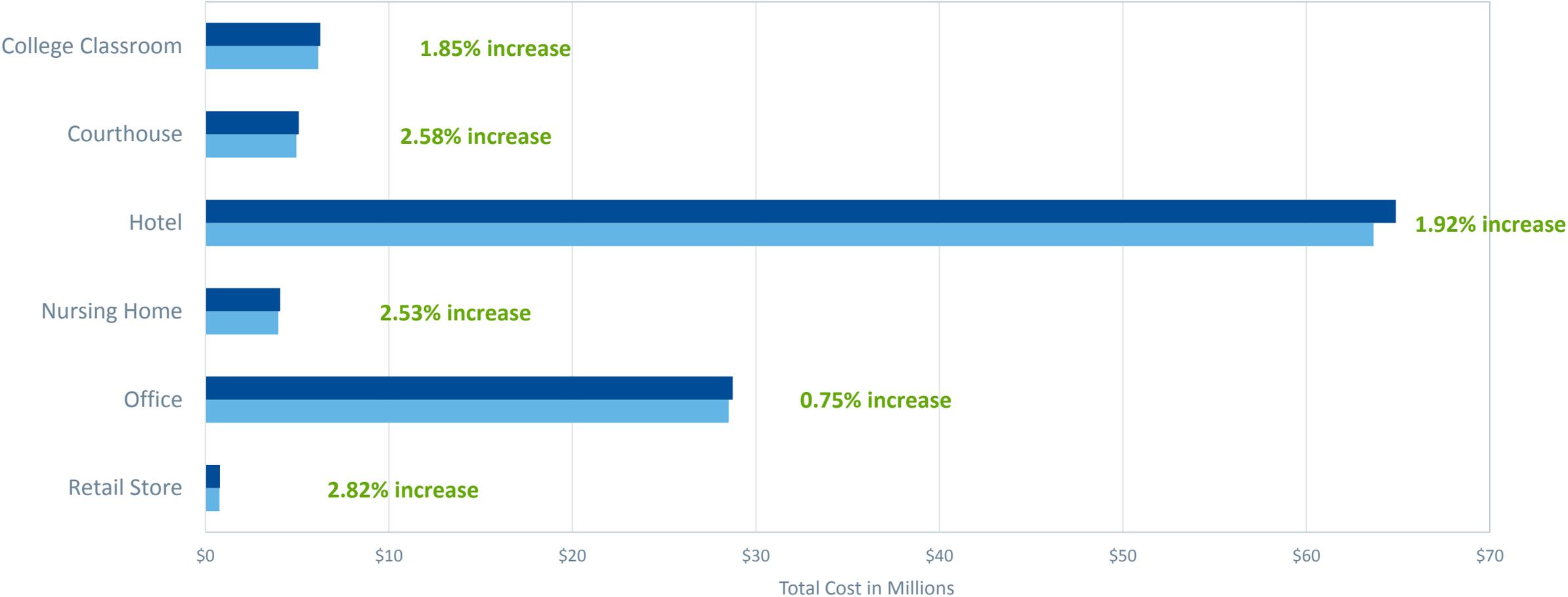
Office
Buildings
and Hotels



Commercial
and Retail

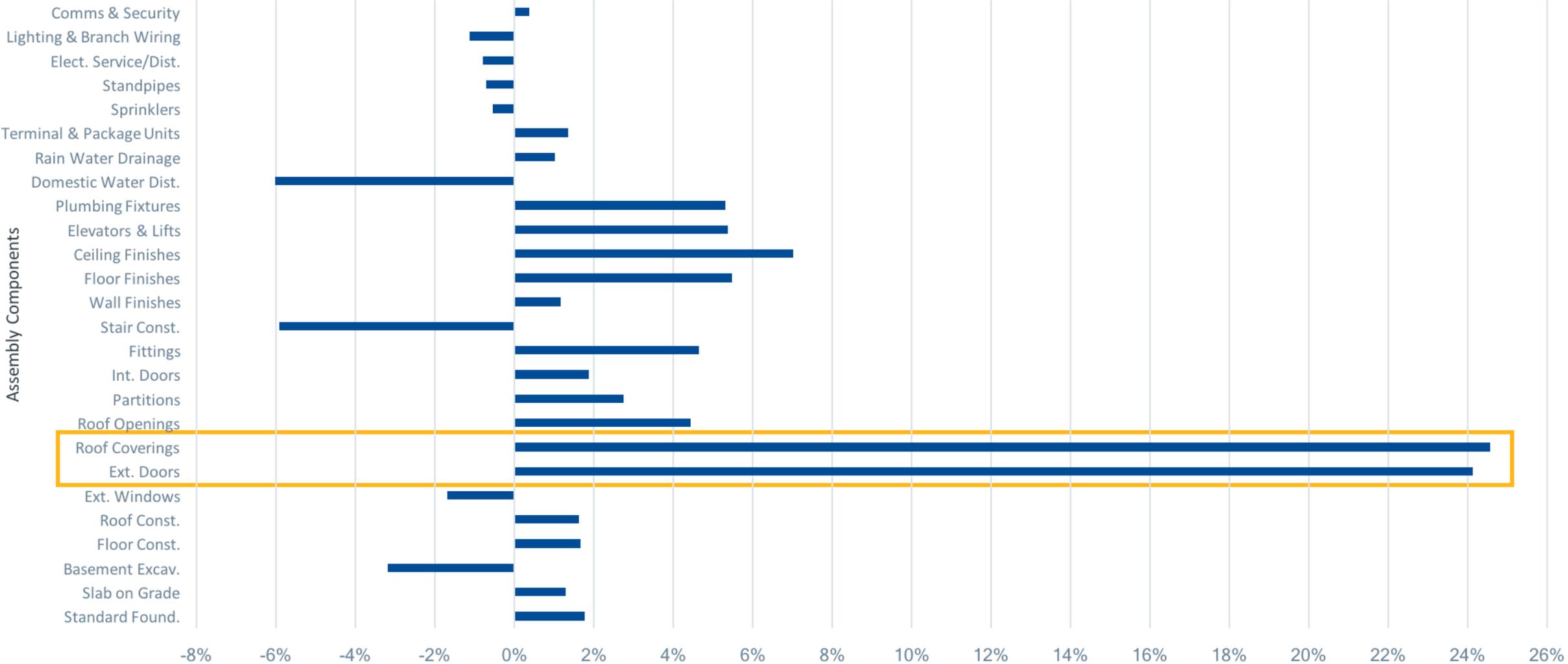
Model Year Over Year Comparisons

■ Total Cost 2018 ■ Total Cost 2017



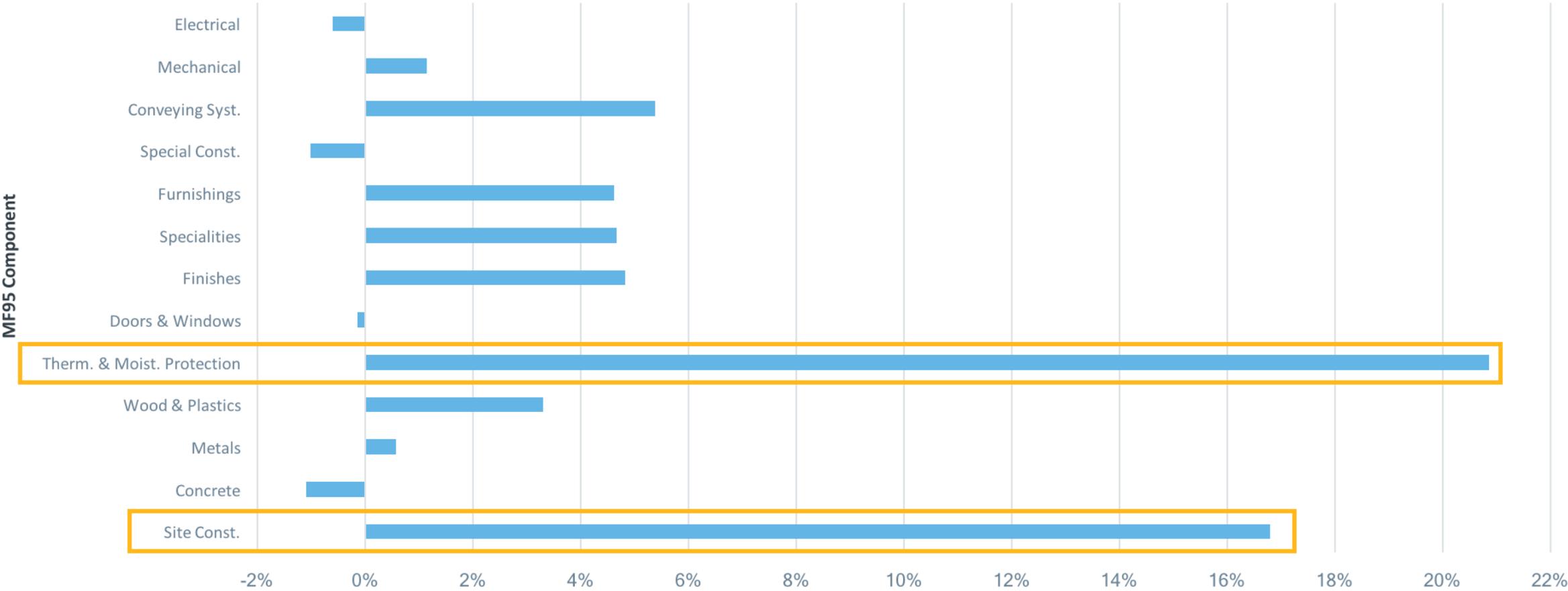
College Classroom - Assembly

Percent Total Change from '17 to '18



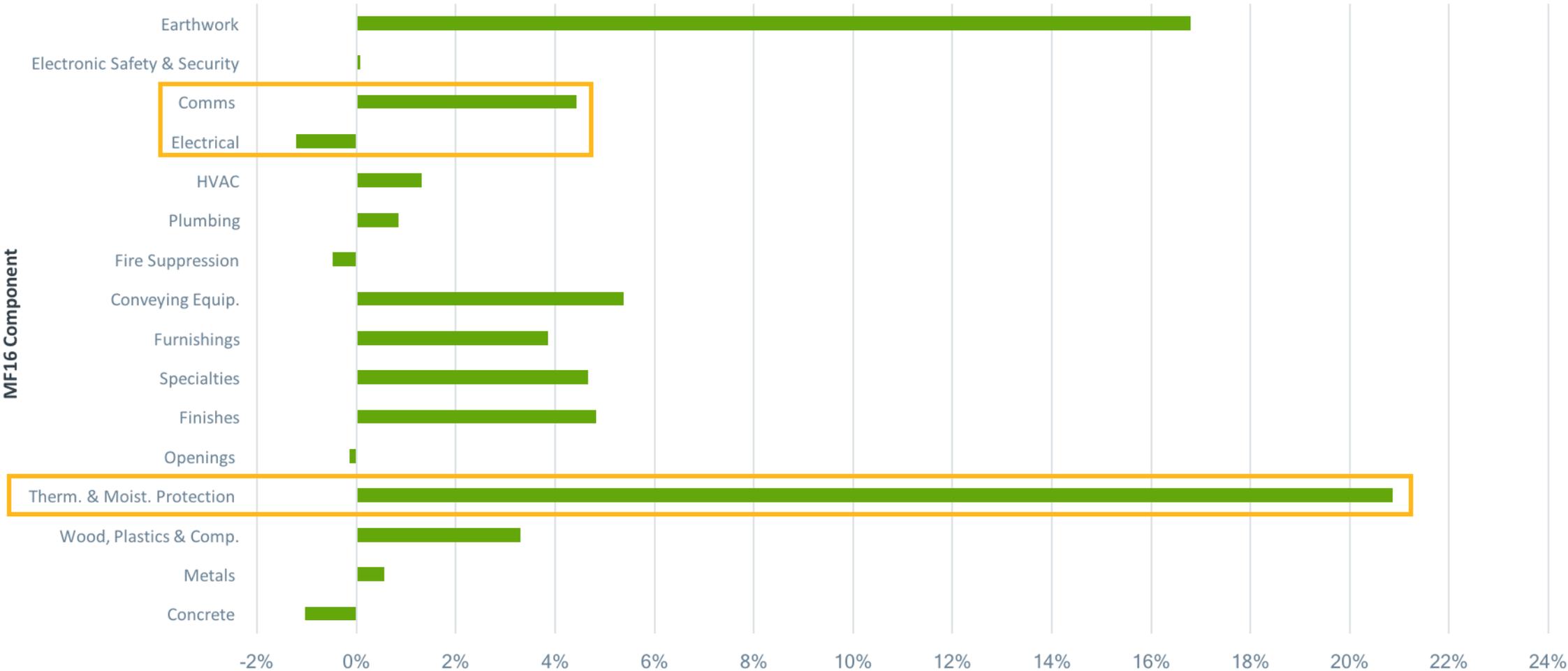
College Classroom – MasterFormat '95

Percent Total Change from '17 to '18



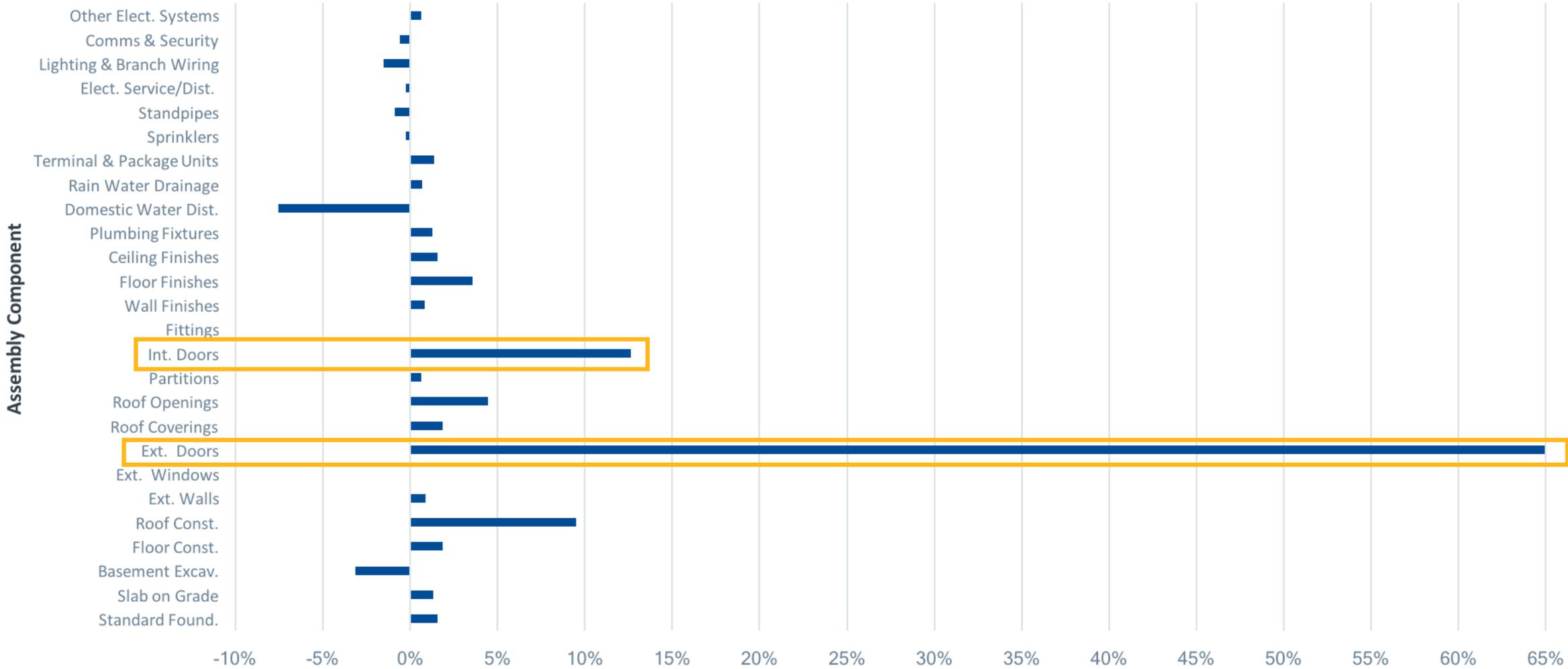
College Classroom – MasterFormat '16

Percent Total Change from '17 to '18



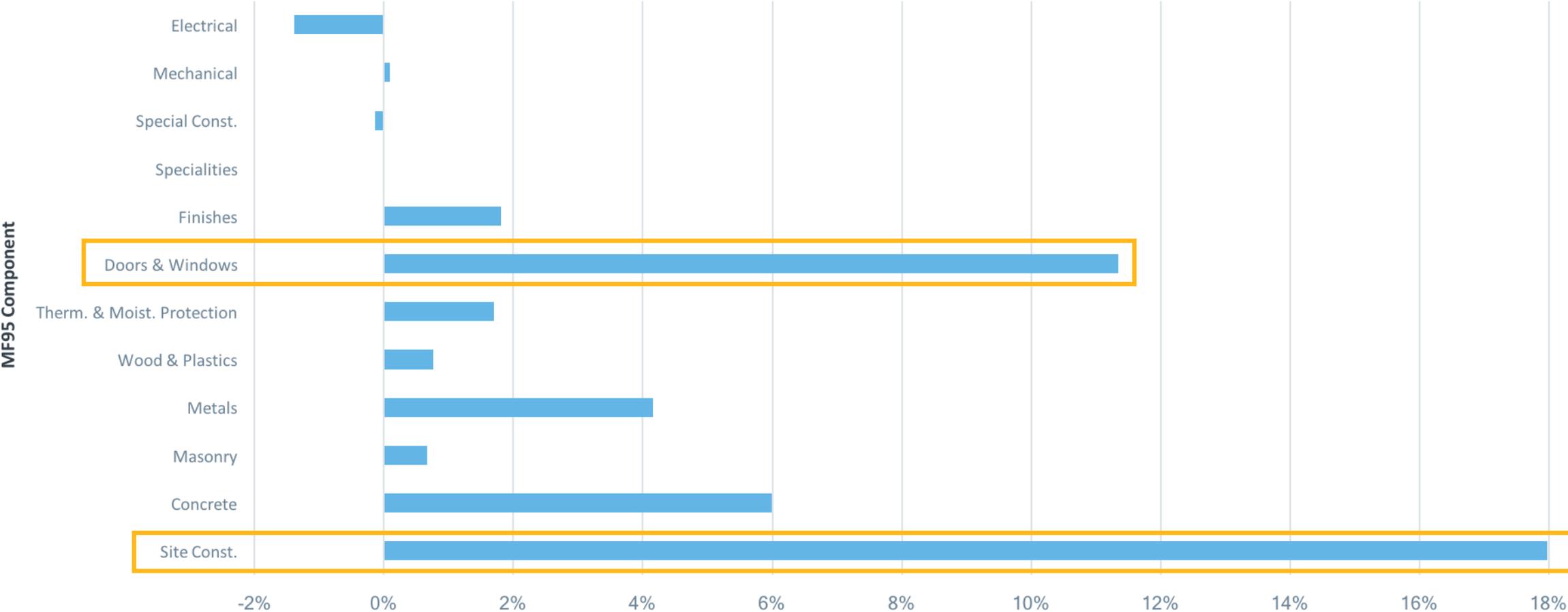
Courthouse - Assembly

Percent Total Change from '17 to '18



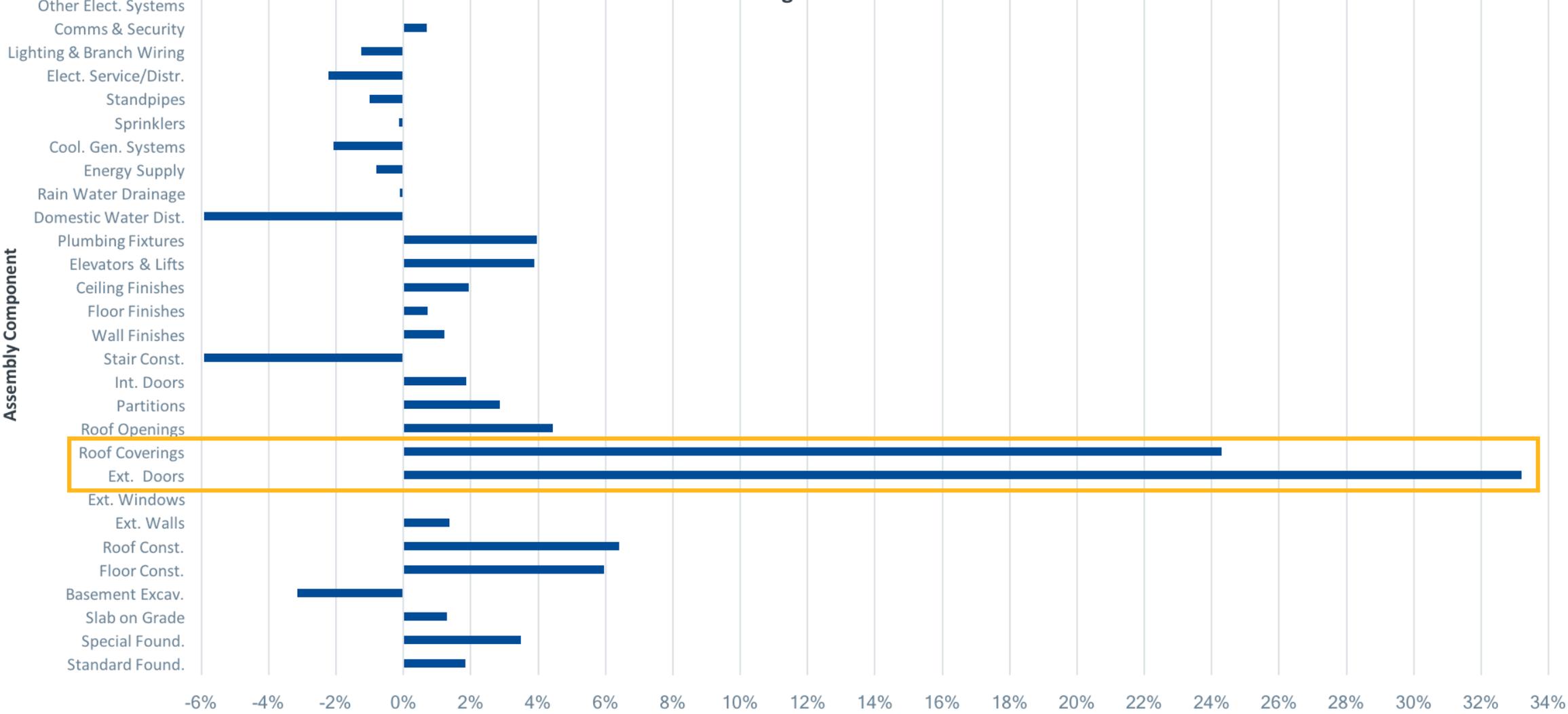
Courthouse – MasterFormat '95

Percent Total Change from '17 to '18



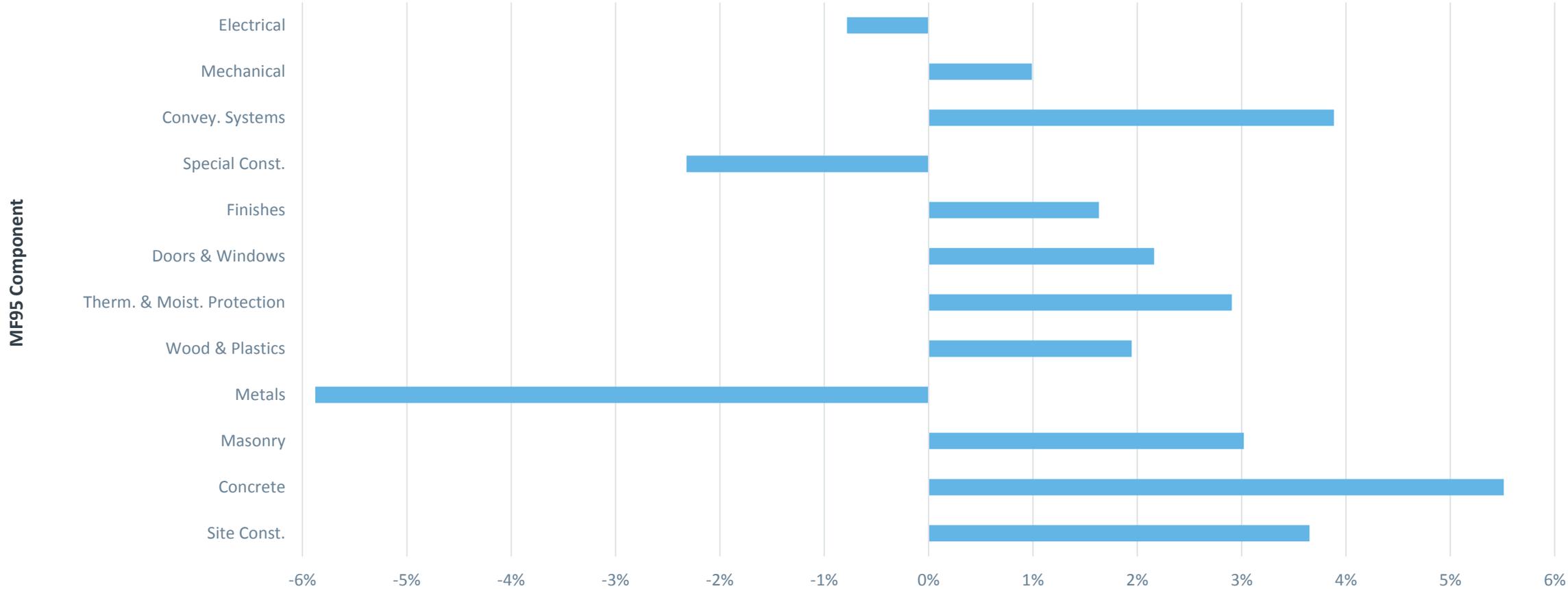
Hotels - Assembly

Percent Total Change from '17 to '18

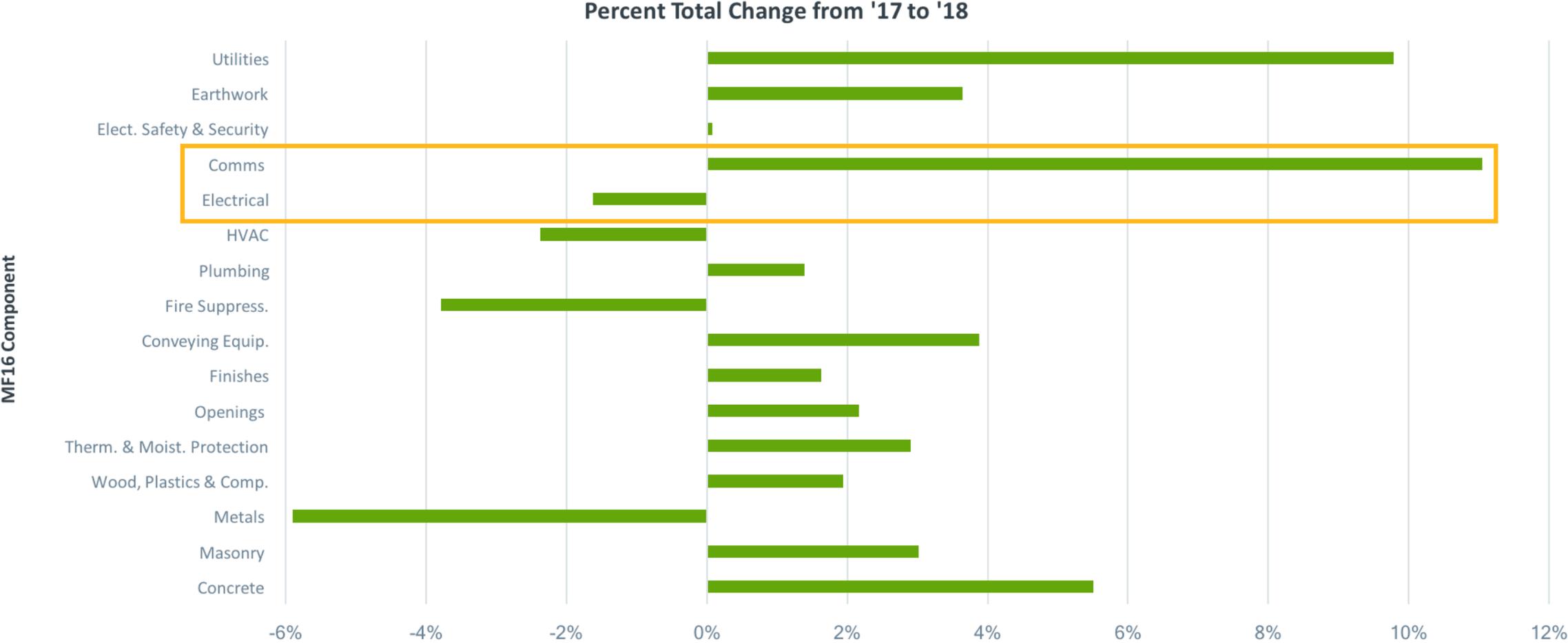


Hotels – MasterFormat '95

Percent Total Change from '17 to '18

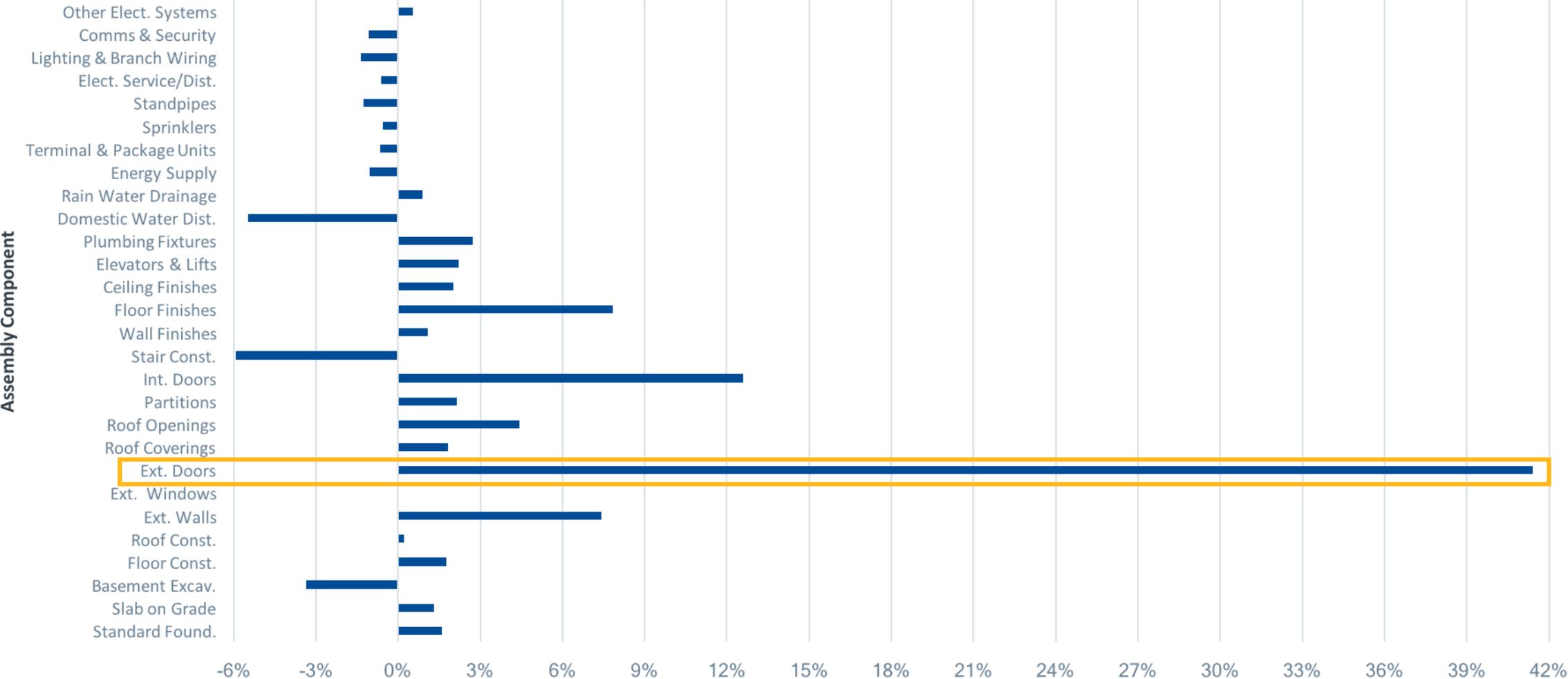


Hotels – MasterFormat '16



Nursing Home – Assembly

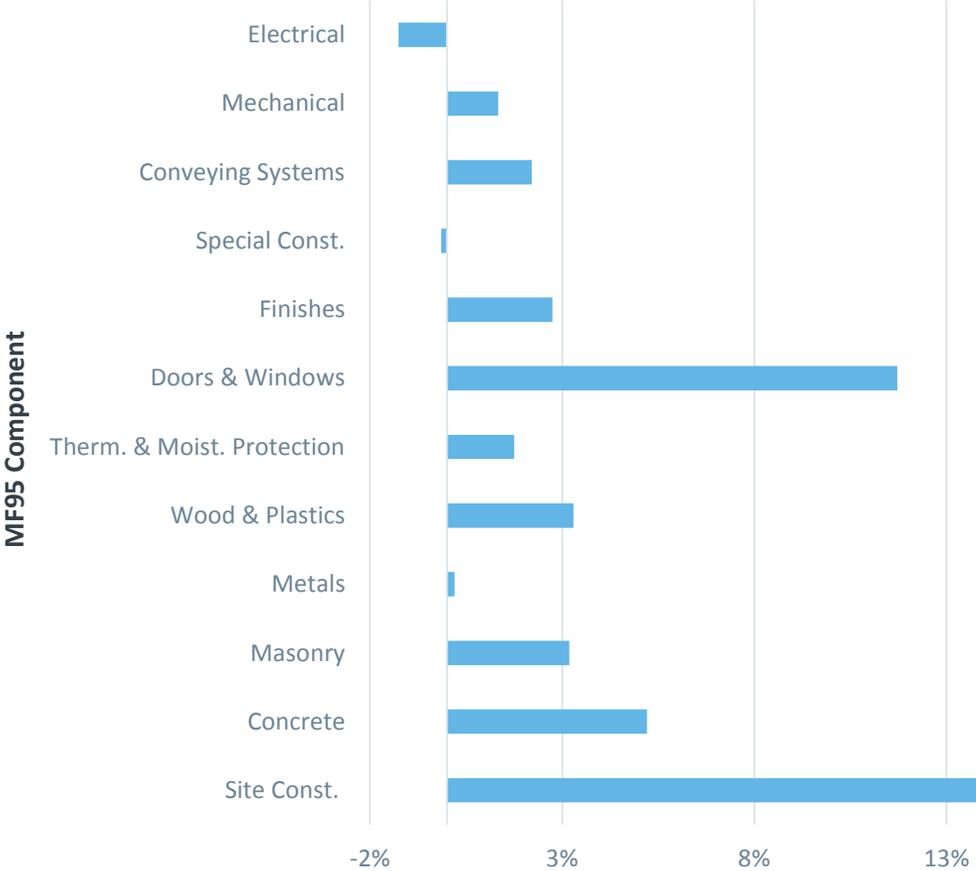
Percent Total Change from '17 to '18



Nursing Home – MasterFormat Comparisons

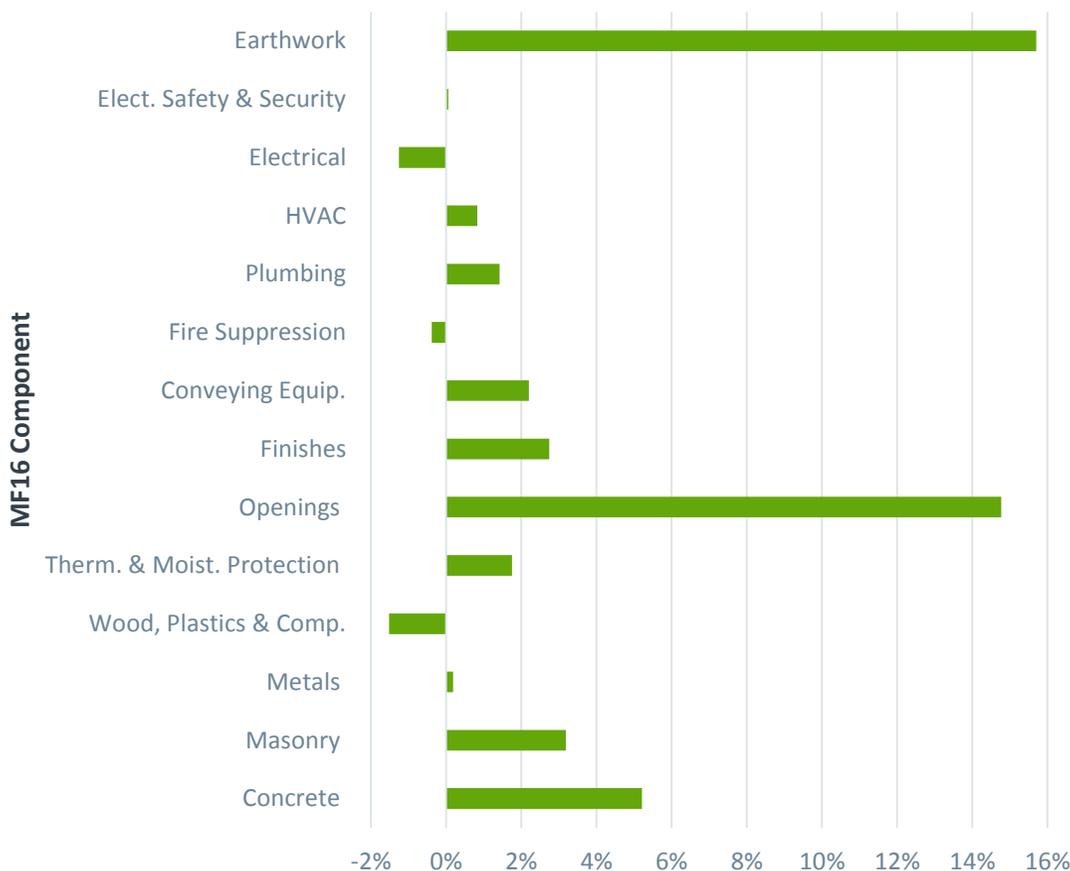
MasterFormat 95

Percent Total Change from '17 to '18



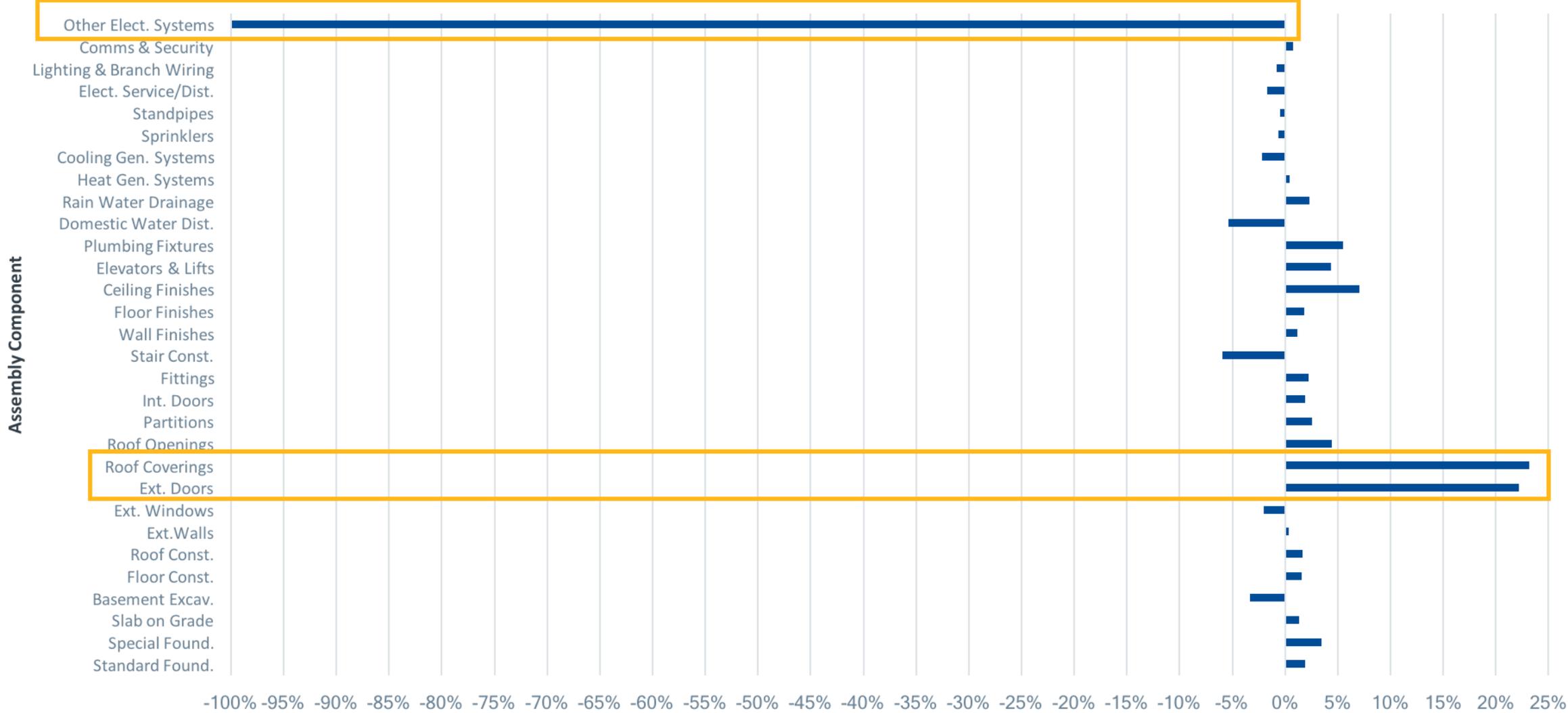
MasterFormat 16

Percent Total Change from '17 to '18



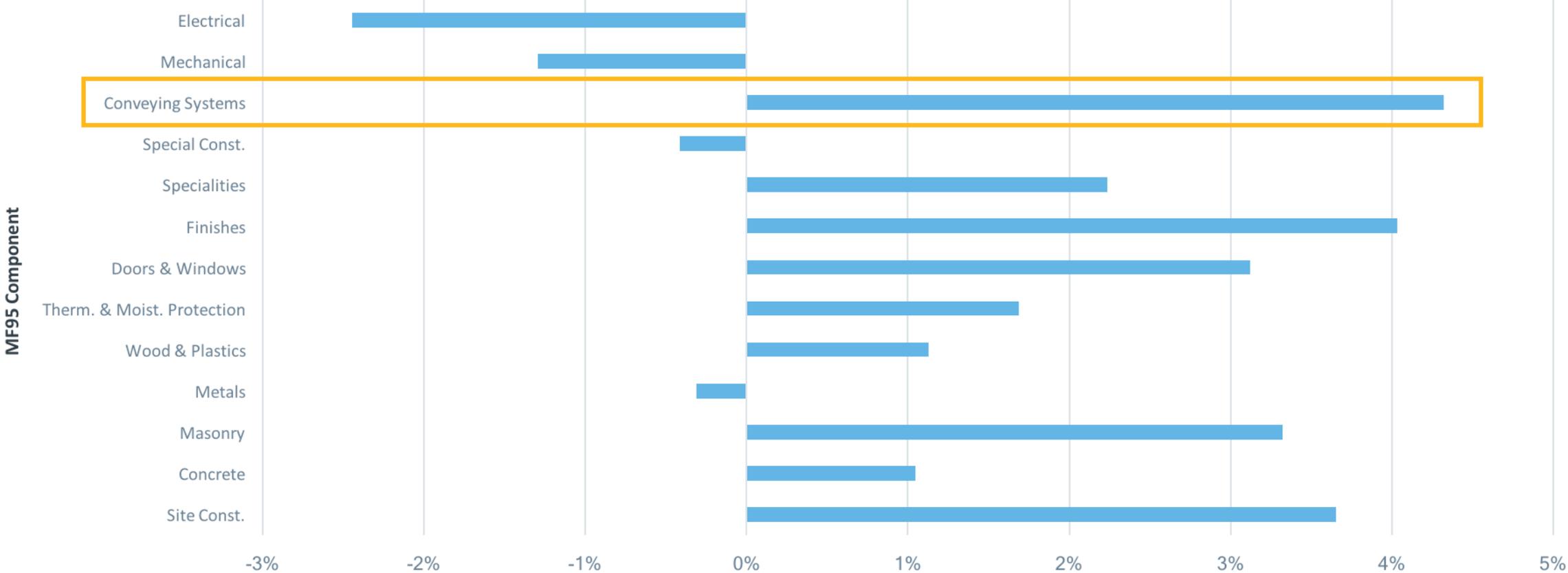
Office – Assembly

Percent Total Change from '17 to '18



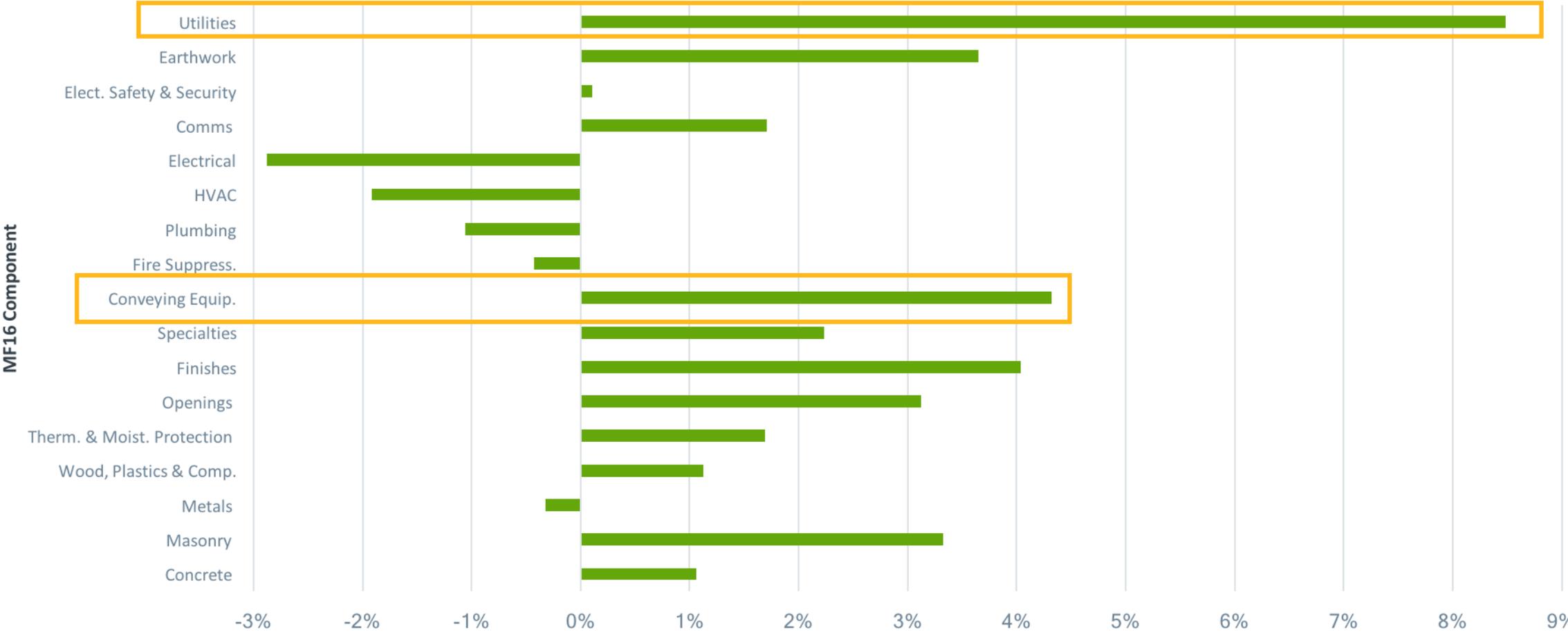
Office – MasterFormat 95

Percent Total Change from '17 to '18



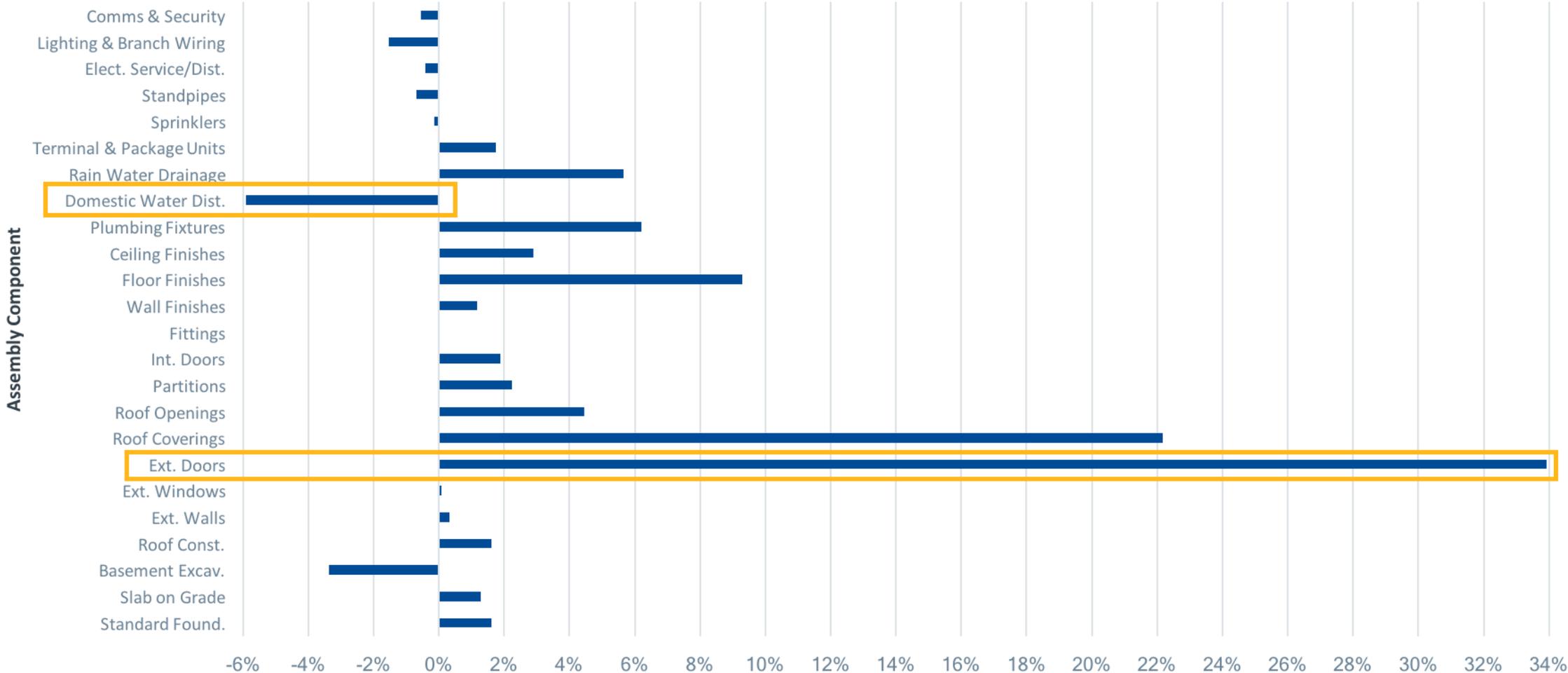
Office – MasterFormat 16

Percent Total Change from '17 to '18



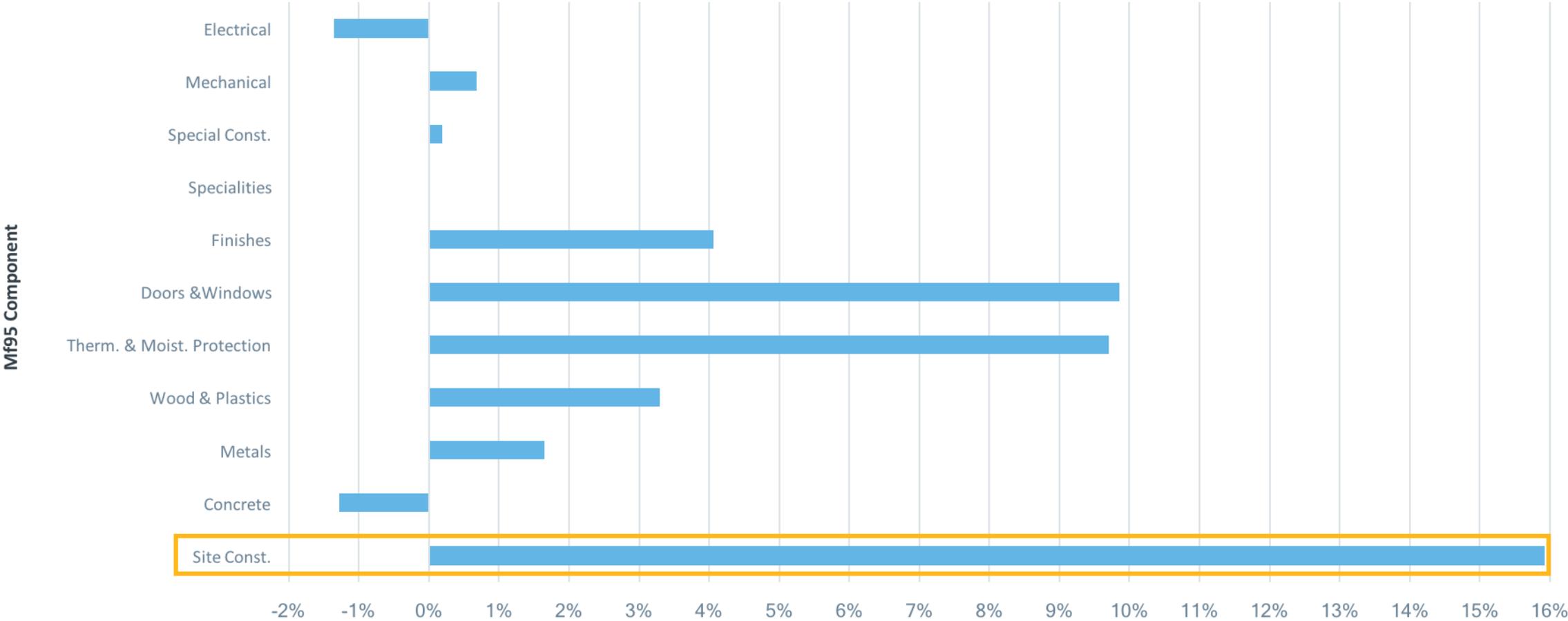
Retail – Assembly

Percent Total Change from '17 to '18



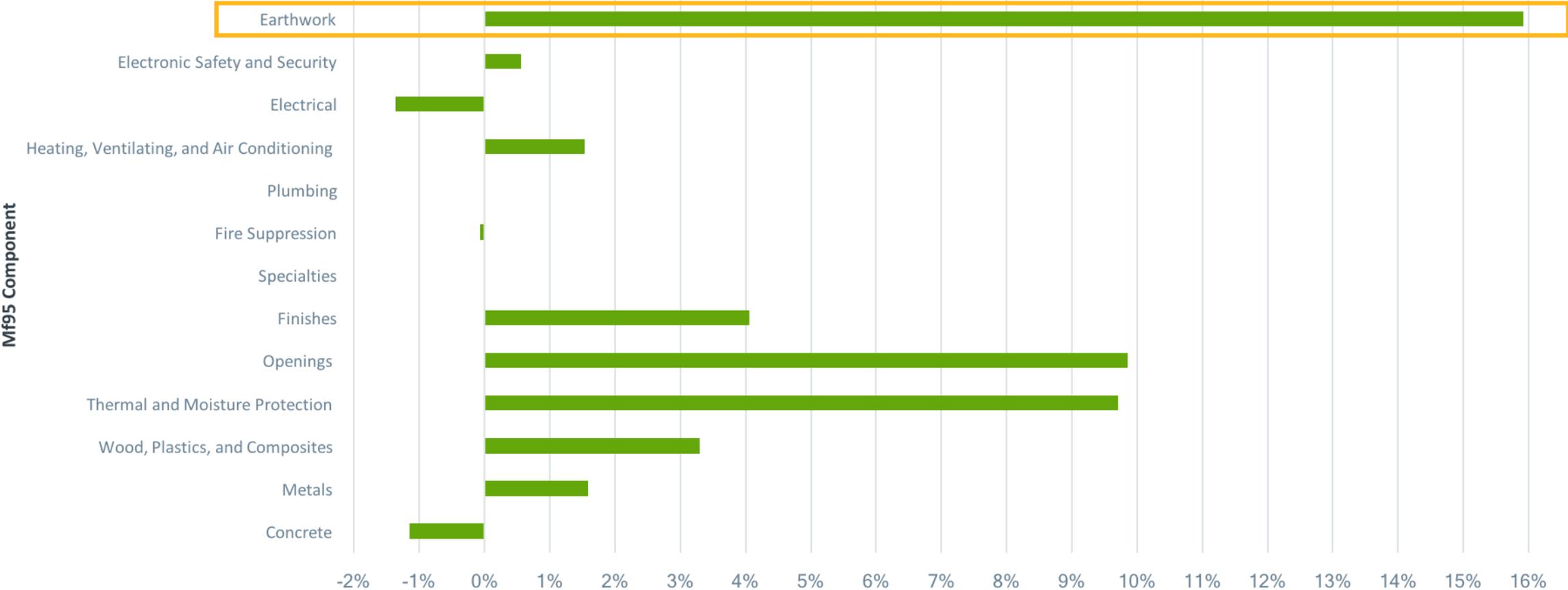
Retail – MasterFormat '95

Percent Total Change from '17 to '18



Retail – MasterFormat '16

Percent Total Change from '17 to '18



Wrap up and Q&A





With additional questions, please contact
Mary-Neil Jackson at m.jackson@gordian.com