



Cost & Building Trends Report



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EXECUTIVE SUMMARY

Consistency has been hard to come by over the last 18 months, but we have found ourselves returning to one theme over and over again: resilience. Through all the ups and downs, the Pacific Northwest design and construction market has held its own as one of the strongest in the country, bolstered by a dynamic group of owners, architects, builders and subcontractors. Sellen has been building projects in the Puget Sound region since 1944, working through recessions, inflation and unprecedented growth. We have been fortunate to experience it all first-hand and play an active role in the transformation of our region, and we believe the future remains as bright as ever for the Pacific Northwest. While national industry forecasters predict slight downturns in volume for the immediate future, Sellen remains confident in the strength of our local economy, including the construction market, job opportunities and continued population growth.

Sellen's **2021 Cost and Building Trends Report** focuses on three topics that illustrate what we are seeing across the industry, with our partners, and within our organization. Our insights for each topic are based on extensive in-house data from the Puget Sound market, discussions with trusted partners, and research by national industry groups.

- **Escalation:** As we grapple with the pandemic's impact on supply chains, short-term volatility will continue to reign. However, more predictable conditions will arrive as soon as supply can catch up to demand, yielding escalation rates in-line with historical norms. We project annual escalation rates on the total cost of construction to be 8.5%, 7% and 5% for the next three years respectively. Rates should taper down to 3% - 3.5% by 2025.
- **2018 International Building Code Revision Impacts:** We now have a thorough understanding of the cost impacts associated with the new code requirements. The largest impacts are rooted in the new energy code requirements and the mechanical and enhanced facade systems needed to meet those requirements. Our team has provided thoughtful insights to help our partners plan for successful projects while considering these changes.
- **Integrated Design & Construction:** Our industry is moving rapidly toward more integrated delivery models, and it's incumbent upon builders to play an integral role in this journey. Sellen is reducing waste and adding value through proactive communication and best practices. Our goal is to enhance the preconstruction process so that we can improve documentation for construction teams and reduce the amount of supplemental information that needs to be issued after construction starts.



Escalation & Volatility

In a year defined by uncertainty, the construction market in the Pacific Northwest remained bullish in 2020. With solid supply chains still in place and general uncertainty about future market conditions, escalation rates hovered between 1% - 2%. This year has been a very different story, however, as several market factors have led to the steepest escalation rates seen in our market in more than 15 years. Ahead, we will cover a few of these factors, drawing from national data and our first-hand knowledge of the local market.

LABOR: Seventeen labor agreements expired in 2021. Most of the new agreements resulted in three-year terms, with trades agreeing to 4% - 5% increases each year. Five more trade agreements are set to expire in 2022, including glaziers, elevator workers, drywall finishers, fireproofers and communication workers. We expect that each of these agreements will have similar results.

MATERIALS: From cars to semiconductors, supply chains around the world are reeling in the wake of

the pandemic — and the construction industry is not immune. In general, the cost of our primary materials for commercial construction — concrete, steel, wood, aluminum, and glass — have all experienced record escalation in 2021. Lumber price volatility garnered the attention of the public and news media outlets, with costs doubling between January and April before promptly dropping 64% in recent months. Though less widely reported, scrap steel pricing has drastically affected commercial construction projects across the country, impacting structural steel, metal decking, rebar, metal studs, HVAC equipment, ductwork, sprinkler piping, and more. **Price increases for these materials range between 20% - 100% since January.**

Fortunately, this volatility is rooted in a simple supply and demand challenge, and we project construction material pricing will eventually stabilize when supply catches up to demand. In the interim, **we recommend closely monitoring pricing trends and locking in material pricing when the timing is right**, even if it requires extra storage costs.

MARKET VOLATILITY: LUMBER

The up-and-down lumber market is indicative of widespread volatility.



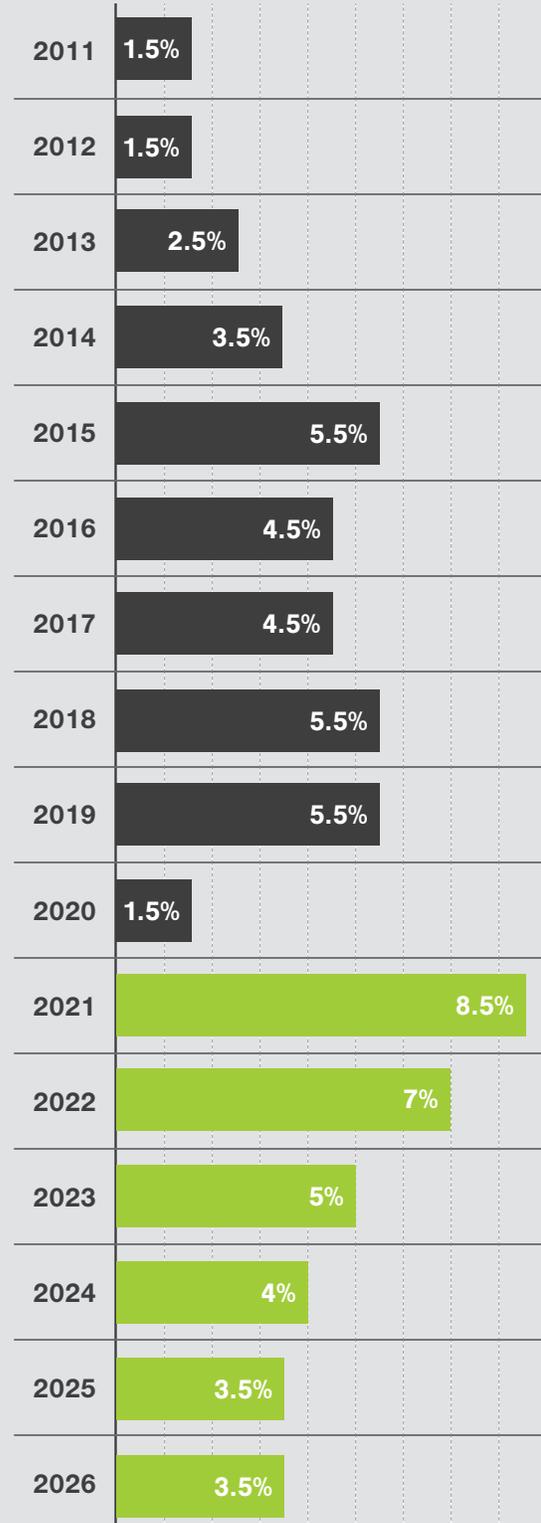
SUBCONTRACTORS: On most projects, 75% - 80% of total costs are attributed to subcontractors who are particularly vulnerable to the escalation caused by labor negotiations and volatile material pricing. These factors, combined with a strong construction market in the Puget Sound, have led to significant price increases on subcontractor and supplier bids. **Our advice for clients is to work with your general contractor to select key subcontractors as early as possible, leveraging their expertise, securing the best available teams, and locking in pricing at the optimal time.**

ESCALATION PROJECTIONS & KEY TAKEAWAYS

To put 2021's sky-high escalation in proper context, we have included 10 years of historical data and five years of projections in the table to the right. In addition to labor negotiations, material pricing and subcontractor market conditions, these projections incorporate a wide range of macroeconomic and regulatory factors. We have analyzed each element through our unique local lens, drawing from 77 years of experience in the region.

The bottom line: The local construction market in the Pacific Northwest remains far more robust than much of the country. Contrary to the analysis of our national construction industry peers, Sellen does not anticipate a decline in commercial construction in our region for several years. We expect escalation to remain relatively high for the next few years before returning to more stable 3% - 4% rates in the years to come. ↩

ESCALATION: 2011 - 2026



Industry Resources

- [National Construction Inflation Report](#)
- [ENR Construction Economics](#)
- [RLB Construction Cost Report](#)
- [RS Means Construction Cost Index](#)

Questions or concerns about how escalation and market volatility could impact your project in the Pacific Northwest? Sellen's preconstruction team is here to help.

Contact us today:

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2018 Code Revision Impacts

Sellen's team has hands-on experience with the 2018 International Building Code (IBC) changes and the cost impacts that must be considered by owners, architects and builders to ensure successful outcomes. The code revisions place a strong emphasis on creating more energy-efficient buildings. While we will only focus on a few topics here, the revisions are widespread and directly impact multiple project types.

We have honed in on the scopes that have the most significant impact on commercial structures. **Our key findings include:**

ARCHITECTURAL

- Building envelopes must feature a lower window-to-wall ratio or a higher performing window system.
- Window system improvements must lower thermal bridging, increase thermal performance and pass envelope pressure testing.
- Elevator pressurization requirements are more restrictive and require a number of additional pressurization tests in several new elevator operational modes.
- Mass timber adoption has resulted in three new construction types, allowing for additional flexibility for mass timber projects.

MECHANICAL

- The new code requires a dedicated outside system and increases the minimum allowed for heating and cooling efficiency, which overwhelmingly require hydronic systems to meet requirements.



The 2018 code revisions demand increased building **energy efficiency** and more stringent **structural** and **seismic** requirements.

- Mechanical ventilation requirements for multi-family residential units have been increased.
- Special inspection requirements for smoke control systems and fire sprinkler systems are now in place.
- Fire marshals can now require a fire watch during construction for projects over 40 feet tall.

ELECTRICAL

- New code includes changes to the GCFI requirements; added metering; more lighting control in open office areas; electric vehicle charging station requirements; and photovoltaic panels for renewable energy strategies.



STRUCTURAL

Seismic demands are increasing across the board, but the uptick will vary greatly depending on the following:

- Performance-Based Design or Code Prescriptive**
 Large projects using a performance-based design (PBD) method will see a slight uptick in the seismic demands. Projects using a code-prescriptive approach will see more significant increases.

Code prescriptive buildings are based on most recent edition of the ASCE 7 Reference Code, which dictates design loads on buildings. The upcoming version of the ASCE 7 Code (2016) is catching up on all the latest data on seismic hazards since the last edition was published.

- Soil Type**
 Buildings on poor soils will see higher increases than those on better soils. This change was driven by research indicating soil amplification of seismic demands through poor soils has historically been under-predicted.
- Building Dynamics**
 When situated on poor soils, buildings with sway periods between one and three seconds will see higher increases than those outside this range. For example, in buildings that are between 5 and 20 stories tall, the height of the structure tends to feature dynamics that align with the soil's response, further amplifying seismic requirements. A study of the 1985 Mexico City earthquake showed that most of the buildings that collapsed from the magnitude-8.0 event were within this height range.

We anticipate buildings located on good soils will see cost increases of around 10% to 15% for lateral systems. Projects on poor soils will see an increase of 50% or more on the lateral system. ↗

Code Revision Impacts: Mass Timber Structures

The 2018 code revisions advanced **mass timber** construction for properties up to 270 feet tall and provided a variety of clarifications for smaller mass timber buildings. We have seen a marked uptick in mass timber structures in the region and expect the trend to continue.

Cost Impacts: Lateral Systems



+10% to 15%
FOR PROJECTS
ON GOOD SOIL



+50%
FOR PROJECTS
ON POOR SOIL





Integrated Design & Construction

As the spaces we build become increasingly complex, it's important to collaborate effectively and proactively with all team members — including owners, architects, engineers, builders, consultants, subcontractors and suppliers — through every stage of a project. From our perspective, the goal of this focus on team integration is simple: to ensure builders are equipped with the accurate, timely design documents we need to achieve the architect's vision within the cost and schedule requirements of our clients. By closing the gap between design and construction, contractors can facilitate a more cost-effective project for owners.

Sellen recently launched the Integrated Design and Construction (IDC) initiative to address this need. The first step was establishing a clear baseline upon which to build. Requests for Information (RFIs) — which occur when builders and subcontractors need additional design information to execute work in the field — were used as a measuring stick. Our preconstruction team sifted through data from 10 recently completed projects to diagnose the root cause of more than 10,600 RFIs. **With this data, the team calculated the average cost of each RFI at approximately \$3,100.** Reducing the volume of RFIs would lead to significant cost savings for all project stakeholders, improve quality control in the field, make safer job sites, and help crews execute quality buildings for our clients.



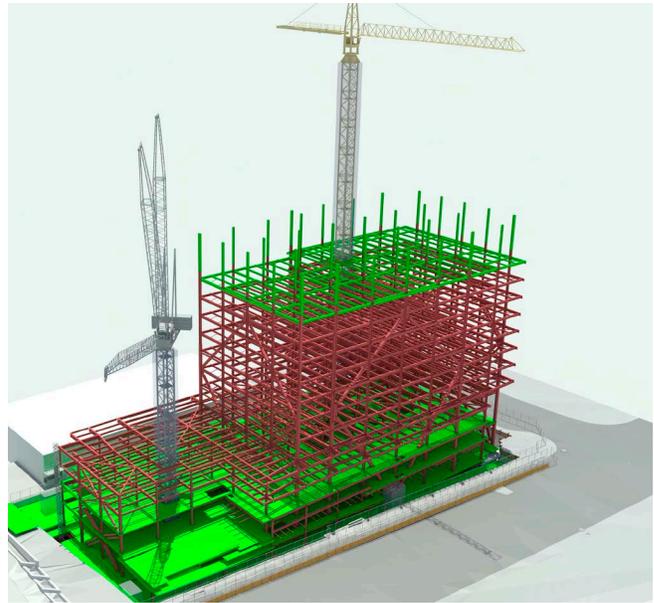
Sellen's team is committed to **closing the gap between design and construction** to add value for owners, architects, subcontractors and builders.



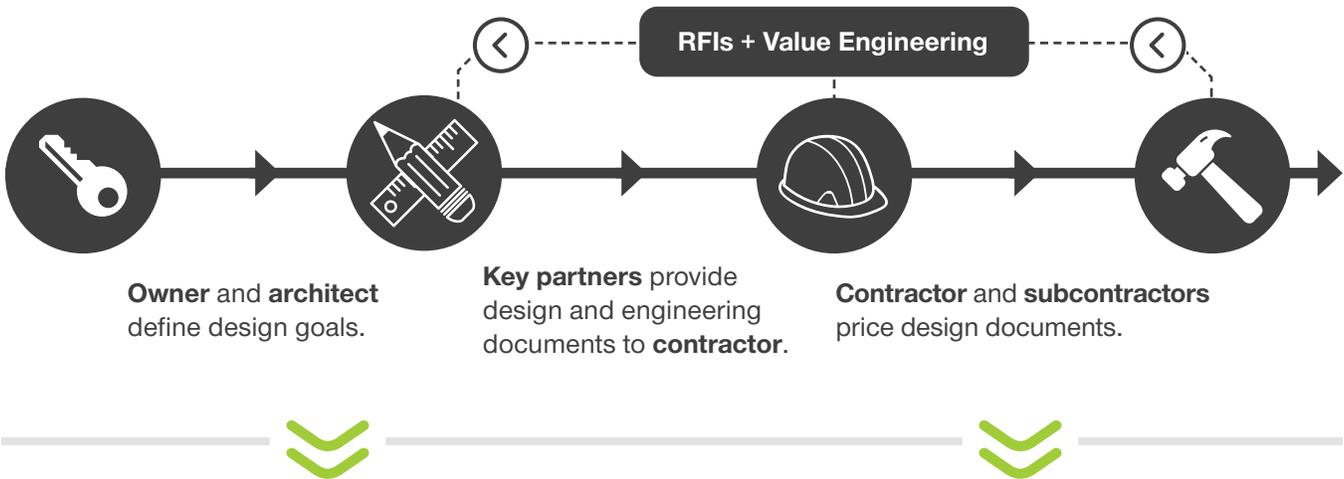
WHAT'S NEXT

Today, a multi-disciplinary steering committee at Sellen comprising architects, engineers, estimators, project managers, superintendents and virtual modelers are working to develop new best practices. This “toolkit” includes communication processes to help improve the flow of information among owners, designers, builders and subcontractors. For example, Sellen’s teams have found new ways to leverage our existing modeling capabilities, using a single platform to integrate cost, schedule and site logistics data with intuitive 3-D renderings and animations.

The early results of Sellen’s IDC initiative have been very promising. These tools help our teams define the design information and documents we need from our design partners; allow for earlier and more effective integration with subcontractors and design consultants; and ensure improved value for our clients.



TRADITIONAL LINEAR DELIVERY



INTEGRATED TEAM DELIVERY

