SEPTEMBER NEWSLETTER
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Community Outreach:
Lionel Davis II
Ph: 901.713.1894

Meeting Location:

The Learning Center
Lichterman Nature Center
5992 Quince (between Lynnfield and Ridgeway, east of I-240)

September's lunch will be provided by One & Only BBQ.

Table of Contents:

2023-2024 MEMPHIS ASHRAE CALENDAR AND ANNOUNCEMENTS

Chapter Meetings/Events
Tuesday, September 12th – Boiler Installation Pitfalls by Gary Holder
Wednesday, September 13th – SAC – Univ. of Mem. Student Chapter First Meeting
Friday, September 15th – SAC – Co-hosting Univ. of Mem. Resumania
Tuesday, October 10th – Standard 241 by David Skelton and Lumalier UV Plant Tour
Tuesday, November 14th – Ventilation by Jim Riendeau
Tuesday, January 9th – TBD
Tuesday, February 13th - TBD
Tuesday, March 12th - TBD

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Sponsor the Memphis Chapter of ASHRAE!

Memphis ASHRAE has a great way to for members to support our ASHRAE chapter and promote their business.

We are offering 2 tiers of support:

SPONSORS:
$500 DONATION
You get:

- Name on Sponsors slide at EVERY chapter meeting for the year
- Name in EVERY monthly newsletter
- Special recognition at every chapter meeting

TOP SPONSORS:
$1,000 DONATION
You get:

- Full presentation slide at EVERY chapter meeting for the year
- Full slide in EVERY newsletter
- Special recognition at every chapter meeting

Contact Robert Smith (Robert.Smith@carrierenterprise.com) to support your chapter today!

*All donations will go to the RP campaign and are TAX DEDUCTIBLE
*Sponsorship slides will be run before and after the speaker at every chapter meeting (virtual or in-person)
*RP chair will confirm final slide layout before presentation

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President's Corner:

To the Members of the Memphis Chapter of ASHRAE - Welcome back!

We are excited for you to see what the 2023-2024 society year has in store for you as we seek to maintain the standard of excellence you expect from us. We have a lot of valuable educational content coming at our regular monthly luncheons, plenty of networking opportunities for our young members, as well as an award-winning Student Activities program that seeks to ensure everyone in our city can aspire to be an engineer.

This year we will continue to (mostly) meet on the Second Tuesday of the Month at Lichterman Nature Center. You can look forward to having an opportunity to connect with other Members, enjoy some Memphis BBQ, earn a PDH or two, and hear some updates from your leadership about additional ways to partner in ASHRAE's mission of advancing the arts of sciences of HVAC. The Society Theme for the Year is 'Challenge Accepted: Tackling the Climate Crisis'.

Our Chapter would not be as strong as it is without the support of our Members. If you would like to join a committee (or volunteer your new hire), you can sign up here.

We have an exciting calendar of programming for the year starting next week. In addition to the regularly scheduled technical session, we will be recognizing many of our Members who have served our Chapter, Region, and Society with excellence and integrity.

Looking forward to seeing you all next week,

Ryan Mathis
President, ASHRAE Memphis 22-23

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Chapter Meeting Topic: **Boiler Installation Pitfalls**

Gary Holder will go through some of the logistics of the boiler install, what pitfalls occur and how to avoid them.

He will specifically cover:

- The Combustion Process
- Boiler Venting and the Potential Pitfalls
- Gas Piping to Boilers and the Potential Pitfalls
- Hydronic Piping to Boilers and the Potential Pitfalls

Boilers are a common feature in HVAC design, whether for summer time heating, winter time heating, manufacturing, etc.

Getting the design right the first time is how we maintain the health, safety, and welfare of the public first and how we keep our clients happy and coming back to us.

Engineers are at their best when they learn from the past, learn from their peers, and continue forward with that knowledge in their future work.

Let us keep these things in mind during Gary's presentation and ask plenty of questions!

Speaker Bio:

Presented by: Gary Holder, EIT

Gary Holder is the VP of Sales for the JMP Equipment and oversees all sales through Georgia and the Western portion of the Carolinas. Gary attributes the continuous growth of sales to the development and continuing education of the sales team. Gary has 20 years of application experience in HVAC and plumbing system design and sales. His in-depth knowledge of the products and systems has allowed him to bring solutions to customer in both the Commercial and industrial markets.

Gary has a BS in Mechanical Engineering from the University of Tennessee with a focus in energy transport phenomena. As a graduate student working towards his Masters, Gary was a
Graduate Advancement Training and Education (GATE) Fellow in automotive technology and co-lead of the Hybrid Vehicle Design project with the DOE and the Ford Motor Company.

As VP for the JMP Equipment Company, Gary has helped develop and teach multiple HVAC and plumbing design courses focusing on real world applications and solutions. Gary's main areas of interest include energy efficient designs and new technology for commercial and industrial applications all while keeping true to the pure science of physics.

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2023 ASHRAE Region VII CRC Louisville

All attending Memphis members and family (except Evans Jack who got in late that night)
Left-to-Right: Alexis, Patrick, Casper with his son and wife, Ryan, Jeff and his wife, Libby, Mike, Lionel, and London

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All the Louisville Chapter members who helped put on CRC, with (DRC) Scott Peach second from right

Outgoing president Lionel Davis II (right) receiving the David Levine Award from Assistant Regional Chair (ARC) Chris Gray (Left)

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This was my (Patrick Silva) second time attending our regional CRC. This time I was able to attend, with my lovely wife Alexis, the entire event rather than just the festivities and Communications Committee workshop. It was great to see new and returning faces from across all the Chapters, excited for fellowship, ASHRAE, and HVAC. I enjoyed getting the full brunt of what CRC is about, and having more time to get to know my counterparts in the other chapters. I would still highly recommend attending if you can as it is a great experience and the Memphis chapter is hosting the 2024 CRC, so why not attend!? This year at the ECC workshop I was the expert providing all the knowledge and lessons I learned from last year's website design and email setup to my counterparts in other chapters. I hope what I shared with them will make their chapter year easier than mine was and that we can all continue to grow together.

Anyways, if you want more photos from CRC this year, let me know and I will get them downloaded from Basecamp. Please feel free to email me with questions or ideas for the website, newsletter, or anything else that you need. Let's have another great chapter year everyone!

ASHRAE Memphis Chapter

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Did Ya Know?

We've all been mystified about how long we'll have to wait for equipment, and what it might cost.

The Tennessee State Architect's office has put together the "Quality in Construction" (QIC) committee. The committee includes major government construction procurement entities, AIA, American Society of Consulting Engineers, Associated General Contractors of TN, and Associated Builders and Contractors (our own Jim Prillaman is a QIC committee member). This group's focus is the betterment of state building construction projects. Part of what this group produces as a quarterly industry update. This document discusses market conditions including supply chain and cost issues.

Attached are the reports from May – 2023 and August – 2023 for your reading pleasure.

We will publish these documents as they are produced.

AGC/ABC Insights: QIC Construction Market Update – 5/17/2023

Contributors: Associated General Contractors – Turner, Messer, JE Dunn, Christman

Associated Builders & Contractors – Skanska, Brasfield & Gorrie, Bell Construction

Overview: Market Conditions 2Q 2023

Supply Chain - same challenges as last quarter, with electrical equipment/gear and large mechanical equipment the longest lead items. These are the biggest consistent challenges. Curtain wall and steel availability has improved although window-wall is a challenge in Middle TN. Generally, we are feeling relief in other materials/products/equipment. Mega projects (industrial, EV plants and data centers) continue contributing to the electrical and mechanical equipment issues. TN Titans is seen as the next mega project that will contribute to supply chain issues.

Labor - Inflationary pressure as a result of increased wages continues. From January 2021 through March 2023, construction wages rose 12% (Wall Street Journal, 4/7/2023). Given that about a third of construction cost equates to labor, there is an underlying cost increase of 4% due solely to wages. We can expect continued pressure on wages, as there is still a shortage of skilled workers and contractors are offering additional incentives to attract and retain workers. While the number of construction jobs decreased in March 2023, the unemployment rate in the industry continued to decline. Electricians remain at the top of the concern list (due to industrial and data mega projects being electrical-heavy scopes). Sitework has recently popped-up as being a tight trade and also drywall.

Subcontractor availability and competitiveness are also driving costs upwards. This is a result of the workforce issues and that subcontractors are generally very busy, especially in Middle, TN. Subcontractors are forced to be more selective about the projects that they choose to pursue and inaddition they are carrying higher fees. As evidence of this, where CM/GC's typically expect a minimum of 3 bidders in every section, there are select trades where the industry is only seeing 1 or 2 bidders.

Escalation - The Producers Price Index (PPI) Final Demand for Construction increased 15.6% year-overyear at the end of Q1 2023. This represents an almost 3% decrease from the rate reported at the end of Q4 2022. The cost is trending in the right direction, but is still significantly higher than a year ago. Overall escalation has stabilized, and is less volatile than it has been. Industry recommends a 2% per quarter escalation for commercial construction projects. In addition, projects may need to take into consideration the subcontracting market and participation relative to each individual project.

Other general commentary: healthcare remains steady, commercial office is pretty much dead, multifamily continues but deals are moving slower hospitality has picked-up. Industrial remains very hot. Aviation will be picking up across the state.

Supply Chain Trends and Insights

Electrification is the primary means currently being pursued to eliminate the burning of fossil fuels and resultant carbon emissions. As the U.S. moves towards a future of nearly-zero emissions

by 2050, the demand for electrical infrastructure will continue and even accelerate. Obviously, this process will subsequently create huge demand for the electrical equipment required to move power around the grid and channel it to both residential and commercial spaces.

At the present time, electrical power used in commercial buildings centers around lighting, air conditioning, refrigeration and a small portion of space heating. As we convert furnaces, water heaters, cooking appliances and clothes dryers from gas and oil to electricity, power requirements will increase significantly. Add to this framework, the goal of having two out of three new cars and light trucks sold in the U.S. electrically powered by 2032, and you start to understand why The New York Times recently reported that total electricity demand in the U.S. may double by 2050.

Electrical equipment providers are already stretched to capacity. Lead times for electrical gear are in excess of 80 weeks (about a year and half) today. Many manufacturers are expanding capacity, but we have not yet seen a positive impact on lead times. This concern is highlighted to point out that long lead times for electrical equipment are here to stay. In order for project teams, design teams and owners to maintain desired project timelines, our recommendation continues to be early release of electrical equipment.

6-12 Month Lead Time and Price Forecast

- **Roofing products** - Roofing supply chain recovery is accelerating. Many roofing system components that have been problematic are now stabilizing. Polyiso insulation lead times now average 20 weeks or less, down from their 52-week peak. Most membranes are running at 18 to 20 weeks, and cover board is averaging eight weeks, down from 22 weeks. One category to watch is fasteners. Fasteners that are 9” or longer still have extended lead times.
- **Asphalt** - Asphalt pricing declines are tied to lower seasonal demand. As the PPI index suggests, we anticipate pricing increases in the upcoming quarter based on infrastructure work.
- **Concrete -** Cement and concrete markets continue to improve and are well-balanced in most geographies. However, as we enter periods of warmer weather, demand may increase dramatically. It is recommended to stay in close communication with concrete providers.
- **Structural steel –** After falling for six months after its peak in June of 2022, structural steel pricing is now rising. Hollow sections are up 10 percent and plate is up 11 percent. Wide flange remained flat through March but is expected to rise in April. Price drivers include a resurgent automotive sector, low levels of imported steel and rising scrap costs.
- **Architectural Interiors** - The availability of interior products has improved across the board, and lead times are down significantly—even glass-mat gypsum products are readily available. Pricing levels have also generally receded. However, pricing for rolled steel is

climbing. As a result, steel stud manufacturers have announced increases, with some being two separate increases of ten percent each in the first quarter of 2023.

- **Doors and Hardware** - Door hardware and hollow metal door lead times continue to hold in the 7-10 week range. The most challenging materials continue to be on the electronic access side. The availability of semiconductors is driving lead times of these products and it is recommended to allow 30 weeks lead time. Improvement is expected in the third and fourth quarters of 2023.
- **Appliances** – There are mixed reports regarding supply chain stability from different manufacturers. Some experience continued challenges from component suppliers and resulting lead-time extensions. Others report stabilizing supply chains and improved lead times in the two to three-month range. Expect more widespread improvements as housing demand continues to cool during 2023.
- **Elevators, Escalators. Moving Walks** - Material supply chains have generally improved slightly over the last quarter, but factory labor is still a challenge. Overall, lead times will likely come down over the next 6-12 months as demand from commercial projects eases. Prices are still expected to rise three to five percent this year as material and labor cost increases get passed on. Lead times for elevators vary considerably depending on the category:
    - Low-rise elevators range from 14-24 weeks
    - Mid-rise elevators range from 20-27 weeks
    - High-rise elevators range from 40-48 weeks
    - Escalators range from 12-20 weeks
- **Plumbing and Fixtures** - While lead times have come down over the past three months, prices for pipe, valves, fittings and fixtures have become variable, depending on the specific category. The average sales price of PVC and steel pipe has steadily declined over the past three months, as commodity prices and freight costs have also declined.
  However, recent increases in steel costs may start to push those other material prices up moderately in Q2 2023. The average price of copper pipe has decreased from its high 1 year ago but increased 14% over the past 3 months, with prices expected to rise further. Regarding valves, fittings and fixtures, approximately 100 manufacturers have announced price increases in January 2023 that range from six to eight percent. Over the next 6-12 months, prices are expected to increase by 5-10 percent.
- **HVAC Equipment** - HVAC demand continues to be driven by strong demand for new construction and HVAC upgrades in both the public and private sectors. With the HVAC equipment market being heavily fragmented by a large number of manufacturers using proprietary designs, lead times can range from 10-12 weeks up to 65+ weeks. Air-cooled chillers and certain centrifugal chillers are running 45-65 weeks. RTU lead times have a very large range based on tonnage and air handlers can range from 10 to 65 weeks based on specifications. Generally, material lead times are improving. However, this is being offset by strong backlog and a shortage of factory labor resulting from the tight labor market. Some lead times including VFDs have improved, but ECM motor lead times have

not and are still running 50-80 weeks. The key to lead time success is early specification coordination with desired manufacturers to achieve optimal lead times.

- **Electrical Gear** - Electrical gear continues to be the longest lead time material for most commercial construction projects. Lead times are specific to the type of equipment and manufacturer. However, switchgear from most manufacturers is being quoting at 70-80 weeks. Some are even quoting 100+ weeks for large transformers and double-ended substations. Other equipment, such as panel boards, busway and transformers are being quoted at 10-40 weeks depending on specifications. These lead times do not include the time for submittal approval. Demand from data center projects continues, as well as K-12, Higher Education, Healthcare and Automotive. Data Centers are the primary reason for increased lead times which is compounded by the general electrification trend to meet carbon reduction goals. The supply and demand imbalance, as well as commodity and labor costs, is predicted to push prices up over the next 6-12 months.
- **Electrical Commodity Materials (includes lighting fixtures)** – Lead times for most commodity electrical items are down as manufacturers have stabilized their supply chains. However, medium voltage cable lead times are still in the 30-45 week range. Prices for copper wire have bottomed out in March as the COMEX copper price has come down from its high in January and stabilized around $4 per lb. Manufacturers of wire have announced price increases in the range of 5-10 percent which will be implemented over the next 6-12 months. However, aluminum wire is expected to stay relatively flat.
- **Generators** - Order intake for generators among the major manufacturers continues to run three to four times the historical rates. Demand is coming from all sectors, but data center demand continues to be extraordinary. The supply chain is still challenging. For example, even when the generator can be delivered on time, custom sound enclosure fabrication may become the constraint based on the lack of industry capacity for this level of demand. Material and labor cost inflation will drive significant price increases this year. The 2MW gensets are now exceeding 100 weeks. Forecasts indicate that the need for data centers will increase over the next three to four years. Gensets in the range of 230kW to 2MWs are running 65-75 weeks due to broad demand from many industries. Prices continue to rise at an annual rate of 15-20 percent due to material, labor and overall demand.
- **Lab Casework and Fume Hoods** - Lab casework lead times are holding steady at the standard range of 8-12 weeks. Input material pricing is escalating (steel) and causing upward pressure on pricing to the market.
- **Wood Products** – Lumber pricing continues to hold steady at pre-COVID levels. Housing starts were reported at 1.4 million (annualized) in February, which is essentially flat compared to starts reported for the end of 2022.
- **Transportation** - Shipping costs continue to decline as post-COVID consumer behavior continues to shift away from purchasing goods and shifts more towards travel and entertainment. As a result, port congestion has eased and shipping costs are approaching pre-pandemic levels.

Remedies/Solutions

- Every team needs to get deeper into the supply chain. It is not enough to depend on subcontractor and supplier input.
- Contractors should be leveraging relationships with the manufacturers to access delayed materials and equipment – can push to get partial, critical orders on critical path.
- It is not enough to look at overall escalation %, you need to look closer and account for escalation material by material because of the variation between materials.
- A robust procurement strategy is essential – leads times are emphasis.
- Example item in a procurement strategy: Buying large air handlers early and designing around it.
- Cost benefit of escalation clauses – leverage allowances – talk with trade partners about allowances in lieu of trade partner taking all the risk to keep from paying worse-case scenario all the time.
- You can drive escalation into a project by buying too early.
    - Understand when materials need to be on site.
    - Make acquisitions just in time where possible.
- Early release packages for long-lead items continues to be a good strategy…consider warehousing strategies (costs associated with this) to ensure schedule.

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AGC/ABC Insights: QIC Construction Market Update – 8/16/2023

Contributors: Associated General Contractors – Turner, Messer, JE Dunn, Christman

Associated Builders & Contractors – Skanska, Brasfield & Gorrie, Bell Construction, T.W. Frierson

Overview: Market Conditions 3Q 2023

Material Pricing and Availability, PPI

According to an analysis by the Associated General Contractors of America August update. The producer price index for new nonresidential construction—a measure of what contractors report they would charge to put up a specific set of buildings—fell 1.4 percent in July. That decrease followed no change the month prior and a slight decline in May. Association officials said contractors are finally seeing some relief from recent supply chain problems and price escalations, but the competitive market means key materials are still very hard to find.

Prices for most major construction inputs were stable or declined in July. Some of the greatest declines included diesel fuel, falling 8.4 percent for the month, steel mill products dropping 7.6 percent, and fabricated structural metal, down 6.4 percent.

Labor

Construction employment increased in 221, or 62 percent, of 358 metro areas between June 2022 and June 2023, according to an analysis by the Associated General Contractors of America of new government employment data. Association officials said the job gains in many parts of the country would have been higher if firms could find more workers to hire. The State of TN employment in the construction industry increased by 5% overall with Clarksville, TN experiencing 15% growth.

“Demand remains strong for many types of construction projects in much of the country,” said Stephen E. Sandherr, the association’s chief executive officer. “But it remains difficult for many firms to find enough workers to hire to keep pace with that strong demand.”

We can expect continued pressure on wages, as there is still a shortage of skilled workers and contractors are offering additional incentives to attract and retain workers. Electricians remain at the top of the concern list (due to industrial and data mega projects being electrical-heavy scopes).

Subcontractor availability and competitiveness continue to drive project costs. This is a result of the limited labor pool and that subcontractors remain busy. Subcontractors are forced to be more selective about the projects that they choose to pursue and in-addition they are carrying higher fees. As evidence of this, where CM/GCs typically expect a minimum of 3 bidders in every section, there are select trades where the industry is only seeing 1 or 2 bidders.

Architectural Billing Index, ABI

The Architectural Billing Index (ABI), in the South region declined December to April has now trended upward, measuring 52.3 May and 50.5 June. Greater than 50 signals increased construction activity in the future.

Miscellaneous Factors

Mega projects (industrial, EV plants and data centers) continue contributing to the electrical and mechanical equipment issues. TN Titans is seen as the next mega project that will contribute to supply chain issues.

AGC officials said that new Buy America requirements that are part of the Bipartisan Infrastructure Law will severely limit the supply of materials contractors can use and increase the costs of those products as the guidance goes into effect. They noted that the new requirements are so strict that many products currently made in the U.S. would not be compliant due to containing small components that are sourced from abroad.

*Note: The Buy America law only applies to federal projects that are funded by the Infrastructure law.

Escalation Recommendation:

Industry recommends a 2% per quarter escalation for commercial construction projects. In addition, projects may need to take into consideration the subcontracting market and participation relative to each individual project. Industry will be in a better position towards the end of the Calendar Year to issue recommendations for future escalation forecasts.

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Market Conditions Detail - 3Q 2023

Supply Chain Trends and Insights

Over the past three months, the construction supply chain has continued to improve—most notably around raw material prices for PVC resins, steel, copper and lumber—due to reduced residential demand and increased capacity as the supply chain normalizes back to pre-pandemic conditions. Roofing, structural steel, architectural interior, plumbing, electrical commodity and wood-based products all see lead times coming back to normal levels and prices stabilizing, albeit at escalated levels. Barring any disruptions, price and lead times are forecasted to remain stable in these categories over the next 6-12 months.

As reported at our last QIC meeting, HVAC and electrical gear supply chain challenges continue due to component, labor, and equipment capacity shortfalls. However, several major HVAC equipment manufacturers have reported significant improvement in backlog based on investment in new facilities, new equipment and the hiring of additional workers to increase factory capacity. With these improvements and lower raw material costs, HVAC equipment lead times have likely peaked and will decrease for the remainder of 2023. Prices are on track to increase 10-15 percent for 2023 but may return to a more normal annual increase of 3-5 percent starting in 2024.

From an electrical equipment perspective, the electrification trend and continued data center investment we reported during our prior QIC market update will likely last for several more years. Even though most manufacturers are investing hundreds of millions of dollars in capacity, the persistent strong demand will only moderately reduce lead times over the next 12 months.

6-12 Month Lead Time and Price Forecast

- **Roofing products** - Roofing supply chains have fully recovered. Lead times for most items are in the 1-3 week range depending on quantities needed. Manufacturers have produced inventory and the seasonally strong roofing market should be on solid footing.
- **Asphalt** - We anticipate pricing increases in the upcoming quarter based on infrastructure work and increases in the cost of petroleum products.
- **Concrete -** Cement and concrete markets have stabilized and availability has greatly improved compared to the last couple of years. However, supply challenges persist in local markets, where construction activity remains elevated. Concrete suppliers have announced a $10/cu.yd increase in concrete for January 2024 in Nashville.
- **Structural steel –** After a slight uptick in March and April, steel input pricing has receded from the previous quarter. Fabricated Wide flange shapes have flattened in price, while hollow shapes and plate are down slightly for the year (5-8 percent).
- **Architectural Interiors** - As a result of the cooling housing market, availability of interior products has improved and is generally within historical lead times. However, with

housing starts jumping 22 percent from April to May of this year, we will closely monitor housing starts and the materials markets for any resultant changes. Additionally, the rising rolled steel costs reported last quarter have reversed course and should provide relief to pricing of metal studs. Drywall pricing has moderated and is up 2-3% YTD.

- **Exterior Glazing Systems** – aluminum curtain wall and window wall systems are currently running 14-16 weeks lead times
- **Doors and Hardware** - Door hardware and hollow metal door lead times continue to hold in the 7-10 week range. We continue to recommend close monitoring of electronic access control materials as some semiconductor supply issues linger.
- **Appliances** – Appliance supply chains have improved and some distributors are even sitting on inventory, but this varies by manufacturer and appliance type. For planning purposes, lead times should be assumed in the two to three-month range.
- **Elevators, Escalators. Moving Walks** - Average lead times remained unchanged over the last quarter but will likely improve over the next 6-12 months as commercial projects ease. General pricing is on track to rise 3-5 percent this year as a result of material and labor cost increases. Lead times for elevators vary depending on the category and manufacturer:
    - Low-rise elevators range from 14-24 weeks
    - Mid-rise elevators range from 20-27 weeks
    - High-rise elevators range from 40-48 weeks
    - Escalators range from 12-20 weeks
- **Plumbing and Fixtures** - Inventory continues to be healthy for most materials, allowing orders to be filled within a few days. However, lead times for certain larger diameter ductile iron pipe are still running 16-20 weeks. In the past three months, we've seen significantly fewer manufacturer price increases and have even noted a few select price decreases. The average sales price of PVC and copper pipe has been flat over the past 6 months. Steel pipe has steadily declined over the past three months and is down 5-7 percent compared to Q1 2023 as commodity prices and freight costs have also decreased. Over the next 12 months, fixture prices are expected to increase by 7-10 percent with an announcement likely in Q1 2024.
- **HVAC Equipment** - While HVAC demand continues to be strong, there is evidence that lead times have already peaked, or will, in the next 3-6 months. Some categories—RTUs, AHUs, DOAS, and WSHP—are already seeing a reduction in lead times as manufacturers work through backlogs. **However, chillers are the one exception as lead times are still 45- 65 weeks due to continued supply chain challenges and high demand from data center projects.** Price increases remain at 10-15 percent for 2023, but we believe there is a chance for more normal 3-5 percent annual increases as early as 2024.
- **Electrical Gear** - Electrical gear lead times continued to increase over the past three months and are not expected to decrease in the next 12 months. Even with investment in additional capacity through 2023, manufacturers have pushed out delivery commitments for some products, citing high demand and supply chain issues as primary causes.

- **Electrical Commodity Materials (includes lighting fixtures)** – Lead times for most commodity electrical items are down as manufacturers have stabilized their supply chains. Contractors and stocking distributors are actively reducing inventory levels as a result of high interest rates and lower demand, both current and forecasted. Lead times may temporarily increase in the future if manufacturers reduce capacity. Prices are still expected to increase 3-5 percent due to inflation of material cost and labor.
- **Generators** - Lead times for generators of all sizes are running 45-75 weeks as manufacturers are still experiencing high demand for all genset sizes. Long lead times are primarily due to component supply chain constraints, such as wire harnesses and semiconductor chips for controls. Data center demand shows no sign of slowing for the next few years as clients are ordering for 2025 delivery and beyond. Price increases are expected in the range of 5-10 percent in 2024.
- **Lab Casework and Fume Hoods** - Lab casework lead times are holding steady at the standard range of 8-12 weeks. After some notable escalation in sheet steel pricing during the first quarter, pricing has fallen as underlying demand no longer supports continued escalation.
- **Wood Products** – Lumber pricing continues to hold steady at pre-COVID levels. However, with the unexpected housing starts jumping 22 percent from April to May, we will closely monitor housing starts as they are the primary driver of lumber pricing.
- **Transportation** - Based on slowing consumer demand and resolution of congestion at U.S. ports, shipping container activity will fully recover to “normal” levels in 2023 and container costs are now at pre-pandemic levels.

Remedies/Solutions

- Every team needs to get deeper into the supply chain. It is not enough to depend on subcontractor and supplier input.
- Contractors should be leveraging relationships with the manufacturers to access delayed materials and equipment – can push to get partial, critical orders on critical path.
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