2021 Industry Insights

An inside look at which markets, technologies, and trends will shape electrical construction and building activity this year

2021
INDUSTRY INSIGHTS

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IN SEARCH OF CONSTRUCTION'S CRYSTAL BALL

Examining the key trends, emerging technologies, and hot markets experts expect to shape the industry in 2021

BY ELLEN PARSON, EDITOR-IN-CHIEF, EC&M

After the unprecedented blows last year delivered to so many people personally and professionally, I don't know anyone who was sad to see 2020 in their rearview mirror. However, as we enter this new year with cautious optimism of what the new normal could look like in a post-pandemic world, it's only natural to feel a little apprehensive with so many unknowns still in play.

Even in normal times, we always start the year off with more questions than answers. This year is no different. What factors will have the greatest short- and long-term impact on your business going forward as a result of the pandemic? What will become of the recently proposed infrastructure bill, and how will the ultimate outcome play out in practical terms as it relates to the construction industry? Which markets will be hot and cold? Will the shortage of skilled labor workers subside or be exacerbated? What type of business climate will permeate the 2021 electrical industry, and what will we all be saying when looking back in retrospect the same time next year?

If only we had a crystal ball that would answers all of these questions and predict the fate of the electrical construction market with absolute certainty. Although we obviously can't deliver complete clairvoyance, we can offer up some compelling clues that lead to informed inferences based on research and evidence.

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Executive Summary

For starters, the construction industry will likely face a hiring boom in the months ahead. That's definitely good news. In fact, according to recent analysis of U.S. Bureau of Labor Statistics data released by Associated Builders and Contractors (ABC) in a press release that posted around press time, construction companies will need to hire 430,000 more workers than they employed in 2020. Estimates from economic consulting firm Markstein Advisors put construction spending at the $1.45 trillion mark in 2021 -- up 1.3% from 2020. A higher growth rate scenario could boost the number of additional construction workers needed in 2021 to nearly 1 million. A follow-up report from ABC went so far as to characterize job growth in the construction market as a "tsunami of economic and employment growth across America."

By turning to these kinds of industry experts, analysts, and forecasters, we can get a better idea of how key trends and emerging technologies may shape the construction market this year. That's what this e-book is all about: an up-close look at 2021 industry insights. Hand-picked by the editors of EC&M and sponsored by Champion Fiberglass, this e-book brings together a complement of relevant articles that will help contractors navigate the current construction climate.

In the construction forecast piece, you'll learn how certain major changes in demand for key project types may present even larger challenges and opportunities. This report includes a discussion of the hottest local metro areas, top construction projects across the country, and which geographic areas are poised for the greatest growth. Addressing the state of material shortages in the electrical industry, the next article examines what consequences economic disruptions carry for the availability and prices of raw materials. The trophy jobs roundup outlines some of the most interest construction projects that are now underway or scheduled to break ground in 2021. As author Jim Lucy, editor-in-chief of EC&M sister publication *Electrical Wholesaling* magazines points out, when you consider that the electrical portion of the typical construction project is roughly 10% of the total project cost, you can see why they will provide electrical contractors and others in the electrical construction community with plenty of revenue potential in 2021. In the next piece, Champion Fiberglass enlightens readers on why so many industries are choosing fiberglass over other conduit materials like PVC SCH 40 and SCH 80, PVC-coated steel and GRC. Since recovery is at the heart of every company's contingency plan for 2021, the final article in this package demonstrates why maximizing revenues and increasing process efficiencies will be key to success and lays out three predictions that will help shape the recovery in 2021. From adapting to changing asset lifecycle responsibility demands, prefab/supply chain demand trends, and new applications for emerging technologies, this grouping of articles has something for every electrical professional. Read through the entire e-book for more information on the key trends expected to take hold this year to give yourself a competitive advantage.

2021 CONSTRUCTION OUTLOOK

While the pandemic's impact on the 2021 construction market is on everyone's minds, some major changes in demand for key project types may present even larger challenges — and opportunities.

BY JIM LUCY, EDITOR-IN-CHIEF OF *ELECTRICAL WHOLESALING*

Even before the pandemic hit, it was always going to be tricky to forecast the 2021 construction market. Huge macroeconomic and demographic changes were already in play that were reshaping demand for new projects and would determine how many buildings would be built in the future, how big they would be, and where they would be located.

Anyone who depends on the office, multi-family construction, or retail markets for business is already feeling the impact of these market-shaping mega changes. For example, while new office construction saw an 11% gain in square footage in 2019 over 2018 to 152 million square feet, Dodge Data & Analytics said that mark was 66 million square feet below the office market's high point in 2007. Even before COVID-19, many companies were already quietly experimenting with work-at-home or remote officing policies that would trim their need to build or rent new office space in the future. These existing trends were accelerated in 2020 because of concerns with the coronavirus, and Dodge Data & Analytics expects the office construction market to decline 20% this year to 122.1 million square feet, gaining back some of that loss with a 5% increase in 2021.

Let's briefly look at the construction market as a whole with the 2021 Dodge Construction Forecast before drilling down to the hottest market segments. After a 14% decline in total construction this year to $770.5 billion, Dodge Data & Analytics sees a 4% increase this year (**Table 1**). During the 2021 Dodge Construction Outlook presentation held in November 2020, which was a virtual event for the first time ever, Richard Branch, chief economist for Dodge Data & Analytics, gave a measured outlook for 2021.

"The COVID-19 pandemic and recession have had a profound impact on the U.S. economy, leading to a deep drop off in construction starts in the first half of 2020," he said in a press statement released after the conference. "While the recovery is underway, the road to full recovery will be long and fraught with potential potholes. After losing an estimated 14% in 2020 to $738 billion, total construction starts will regain just 4% in 2021.

2021 Dodge Forecast for U.S. Total Construction Starts ($ Billions)

	2016*	2017*	2018*	2019	2020 Forecast	2021 Forecast
Total Construction	739	789	819	853	738	771
	7%	7%	4%	4%	-14%	4%
Commercial	115	117	124	139	107	113
	23%	2%	6%	12%	-23%	5%
Institutional	123	145	142	141	116	117
	11%	18%	-2%	-1%	-18%	1%
Manufacturing	20	26	32	32	17	17
	-19%	29%	23%	1%	-49%	0%
Single-Family	201	218	230	230	239	254
	8%	9%	5%	0%	4%	7%
Multi-Family	96	88	100	100	86	85
	10%	-8%	13%	0%	-14%	-1%
Public Works	136	162	165	155	142	142
	5%	19%	2%	-6%	-9%	0%
Utilities	47	32	24	54	31	42
	-18%	-33%	-24%	123%	-43%	35%

Source: 2020 Dodge Construction Outlook / Dodge Data & Analytics.
* = Historical data

Table 1. The economists at Dodge Data & Analytics expect a 4% increase in total construction this year and believe the single-family construction and utility segments will provide the most growth opportunities.

"Uncertainty surrounding the next wave of COVID-19 infections in the fall and winter and delayed fiscal stimulus will lead to a slow and jagged recovery in 2021," Branch said. "Business and consumer confidence will improve over the year as further stimulus comes in early 2021 and a vaccine is approved and becomes more widely distributed, but construction markets have been deeply scarred and will take considerable time to fully recover. The dollar value of starts for residential buildings will increase 5% in 2021, nonresidential buildings will gain 3%, and nonbuilding construction will improve 7%. Only the residential sector, however, will exceed its 2019 level of starts thanks to historically low mortgage rates that boost single-family housing."

Branch offered the following forecasts for key market segments:

Single-family construction. The dollar value of single-family housing starts will be up 7% in 2021, and the number of units will grow 6% to 928,000 (Dodge basis). Historically low mortgage rates and a preference for less dense living during the pandemic are clearly overpowering short-term labor market and economic concerns.

Multi-family construction. This market segment "will pay the price for single family's gain," he said in the press release. "The large overhang of high-end construction in large metro areas combined with declining rents will lead to a further pullback in 2021. Dollar value will drop 1% while the number of units started falls 2% to 484,000 (Dodge basis)," he said. The Austin-Round Rock-Georgetown, Texas, metropolitan statistical area (MSA) led the nation in multi-family building permits through September with 14,945 permits.

Commercial building. The dollar value of commercial building starts will increase 5% in 2021. "Warehouse construction will be the clear winner as e-commerce giants continue to build out their logistics infrastructure," Branch said. "Office starts will also increase due to rising demand for data centers (included in the office category) as well as renovations to existing space. Retail and hotel activity will languish."

Institutional construction. In 2021, institutional construction starts will increase by 1% as growing state and local budget deficits impact public building construction. Education construction is expected to see further declines in 2021, while health care starts are predicted to rise as hospitals seek to improve in-patient bed counts.

Industrial construction. The dollar value of manufacturing plant construction will remain flat in 2021. Declining petrochemical construction and weak domestic and global activity will dampen starts, Branch said, although he expects a small handful of project groundbreakings will level out the year.

Public works. Branch said this segment of the construction market will see little improvement as 2021 begins due to continued uncertainty surrounding additional federal aid for state and local areas. "The unfinished appropriations process for fiscal year 2021, which began October 1, raises doubt on the sector's ability to post a strong gain in 2021," he added. "Public works construction starts will be flat over the year."

LNG export and renewables. Dodge Data & Analytics forecasts that electric utilities/gas plants will gain 35% in 2021, led by expected groundbreakings for several large LNG export facilities and an increasing number of wind farms.

THE HOTTEST LOCAL METROS IN 2021

For most *EC&M* readers, this is where the rubber meets the road. The national data at the 35,000-foot-level discussed in this article is good for an overview on the overall direction of the market and is an important point of comparison, but local market conditions can and typically do vary wildly from the national level — and can change from year-to-year. In analyzing the latest available data on population increases, electrical contractor and industrial employment, and building permits, we found that despite the current economic misery, you can still find some growth on the local level in metropolitan statistical areas (MSAs) that fit one of the following profiles.

The big dogs. Metros with more than 2 million residents are expected to add population the fastest over the next few years. Phoenix; Dallas; Austin, Texas; Atlanta; and Tampa-St. Petersburg, Fla., continue to add new residents.

Growth belts. Economically supercharged regions of the United States such as Raleigh-Durham, Austin-San Antonio, San Jose-San Francisco, and Colorado's Front Range (Colorado Springs north through Denver and Boulder to Fort Collins, and out to Greeley), and about 125 miles along Utah's Wasatch front from Logan, Utah, in the north, down through Salt Lake City and south to Provo, Utah, are examples of regions are doing better than most other metros right now. San Jose's downtown area will have a completely new look in a few years because of all the downtown construction there right now. Before COVID-19 hit, news reports out of Austin, Texas, said there were more than 30 new office towers planned for the city. Later in the year, Tesla's Elon Musk announced he will be building a billion-dollar Gigafactory in Austin as well.

Tech is tops. While commercial construction has slowed in these markets, in "normal" economic conditions, you can typically count on tech hubs like Silicon Valley-San Francisco, San Diego's biotech patch, Boston, Austin, and Seattle to outpace other metropolitan areas.

Stars of the Sunbelt. Big-time population growth continues to drive residential and commercial markets in multiple MSAs in Florida, South Carolina, North Carolina, Texas, Phoenix, and much of Colorado's Front Range.

Swinging high and low. Cyclical metros can be really hot or ice cold. Examples of these markets include Dallas, Houston, Orlando, Fla., and Phoenix. Atlanta isn't as cyclical as these other Sunbelt cities, but it has some similar growth characteristics.

Vacation land, lifestyle, retirement havens, and nirvana for telecommuters. Bozeman, Mont.; Bend, Ore.; Boise, Idaho; St. George, Utah; Myrtle Beach, S.C.; and Southwest Florida bank on the leisurely lifestyles they can offer to attract new residents and

businesses. The latest population data shows that the Myrtle Beach-Conway-North Myrtle Beach, S.C.-N.C., MSA averages 47 new residents moving in every day.

Ports, freight rail lines, and intermodal hubs. Port construction and investment in rail lines and intermodal hubs drive growth in these MSAs. All of the larger ports, including Long Beach-Los Angeles, Houston, Oakland, and New York-New Jersey, have benefited from this trend. Activity in some smaller ports, like Savannah, Ga., also is strong.

Small but mighty. Metros with less than 200,000 residents are showing all the signs of big-time growth. See vacation/retirement/lifestyle metros. Census data shows that micropolitan markets in more rural/ex-urban areas like Bozeman, Helena, and Kalispell, Mont.; Cedar City and Heber, Utah; and Williston, N.D., are growing the fastest.

LOOKING AHEAD

Despite the challenges confronting the office, multi-family, and retail markets, once a vaccine is widely distributed, the construction market will look a whole lot better than it did in spring 2020 — when more than 1 million total construction jobs were lost. The single-family housing, data center, warehouse, and utility-scale renewables segment of the market look particularly promising for electrical contractors, specifying engineers, and other electrical professionals. Check out some of the larger commercial projects and utility-scale solar and wind farms in **Table 2**.

Editor's Note: This is an excerpt from the full article, which originally ran in the December 2020 issue of EC&M. Read the full story here.

Project Watch: Data Centers, Renewables, and Warehouses Leading the Pack

Contract Value ($ Millions)	Project	Location	Project Type	Status	Source
NA	Facebook's 1.5-million-sq-ft expansion of existing data center	Newton, GA	Data center	Planning stages	datacenterknowledge.com
400	Facebook data center	Altona, IA	Data center	Underway	desmoinesregister.com
NA	Two Microsoft data centers	West Des Moines, IA	Data center	Planning stages	kcci.com
800	Data center	DeKalb, IL	Data center	Planning process	northernstar.info
600	Google data center	Kansas City, MO	Data center	Proposed	kansascity.com
6000	Diode Ventures' plan for up to 13 data centers on Kansas City campus	Kansas City, MO	Data center	Proposal	datacenterdynamics.com
600	Google data center	Papillion, NE	Data center	Underway	starherald.com
600	Google's expansion of existing data center	Henderson, NV	Data center	Planning stages	lasvegassun.com
600	Data center at Tahoe-Reno Industrial Center	Reno, NV	Data center	Planning stages	rgj.com
350	Facebook data center	New Albany, OH	Data center	Underway	Dodge Data & Analytics
NA	358,000-sq-ft Flexential data center	Hillsboro, OR	Data center	October 2020 groundbreaking	datacenterdynamics.com
800	Facebook data center	Gallatin, TN	Data center	Planning stage	datacenterknowledge.com
225	Google data center	Dallas	Data center	Underway	construction.com
300	CloudHQ data center	Ashburn, VA	Data center	Underway	Dodge Data & Analytics
135	RagingWire data center	Ashburn, VA	Data center	Underway	Dodge Data & Analytics
306	Aligned Energy data center	Ashburn, VA	Data center	Underway	construction.com
258	Data center	Manassas, VA	Data center	Underway	Dodge Data & Analytics
500	Travers Solar Farm at Edmonton Airport - Canada's largest	Edmonton, AB	Renewables - Solar	Planning stages	cbc.ca
625	Palen Solar Farm	Desert Center, CA	Renewables - Solar	Underway	Dodge Data & Analytics
438	Athos Solar facility	Desert Center, CA	Renewables - Solar	Underway	construction.com
NA	Freepoint's 114MW Cedar Creak and Raceway solar projects	Townsend & Harrington, DE	Renewables - Solar	2021 groundbreaking	delawarebusinesstimes.com
NA	D.E. Shaw's 70MW in solar capacity	Washington & St. James Parishes, LA	Renewables - Solar	Broke ground October 2020	sauraenergy.com
575	Permian Energy Center solar project	Andrews County, TX	Renewables - Solar	Underway	construction.com
NA	120MW solar farm on 700 acres	Moses Lake, WA	Renewables - Solar	Broke ground September 2020	ifiberone.com
531	Juno Solar Project	Borden County, TX	Renewables - Solar	Broke ground February 2020	construction.com
469	Titan Solar Project	Culberson County, TX	Renewables - Solar	Broke ground March 2020	construction.com
NA	225MW solar project	Haskell County, TX	Renewables - Solar	October 2020 groundbreaking	enelgreenpower.com
NA	47MW Amazon wind farm	Tehachapi, CA	Renewables - Wind	Underway	cnbc.com
600	Jordan Creek Wind Farm	Williamsport, IN	Renewables - Wind	Broke ground March 2020	construction.com
406	Pryor Mountain Wind Farm	Bridger, MT	Renewables - Wind	Broke ground February 2020	construction.com
NA	240 wind turbines at Xcel Energy Wind Farm	Roosevelt County, NM	Renewables - Wind	Underway	abc7amarillo.com
600	Golden Hills Wind Project	Sherman County, OR	Renewables - Wind	Underway	construction.com
500	Big Raymond Wind Farm	Hidalgo, Willacy & Cameron Counties, TX	Renewables - Wind	Broke ground February 2020	construction.com
220	Horse Heaven Hills Wind Farm with 200-plus turbines	Highland, WA	Renewables - Wind	Planning stages	tri-cityherald.com
550	Wheatridge wind and solar project	Lexington, OR	Renewables - Wind & Solar	Underway	construction.com
200	Amazon fulfillment center	Memphis, TN	Warehouse/ distribution center	Planning	Dodge Data & Analytics
250	820,000-sq-ft Amazon fulfillment center	Pflugerville, TX	Warehouse/ distribution center	Planning stages	wbusinessfacilities.com
300	Amazon distribution center	Colorado Springs, CO	Warehouse/ distribution center	Planning stages	construction.com
415	Amazon distribution center	Wilmington, DE	Warehouse/ distribution center	Broke ground March 2020	Philadelphia Inquirer
200	Amazon distribution center	Atlanta	Warehouse/ distribution center	Underway	construction.com

Table 2. Data centers, warehouses, and utility-scale solar and wind farms will offer some of the biggest construction opportunities in 2021.

THE STATE OF MATERIAL SHORTAGES AND THE ELECTRICAL INDUSTRY

Contractors brace for materials supply fluctuations, price volatility in 2021

BY TOM ZIND, FREELANCE WRITER

Economic disruptions often carry consequences for availability and prices of raw materials, and that looks to be the case in the construction sector as a year like no other winds down.

The U.S. Chamber of Commerce Q4 2020 Commercial Construction Index (CCI) shows contractor concern about building product and material shortages spiking in the fourth quarter. The share of contractors polled saying they are facing shortages of at least one material stands at 71%, up from 54% in Q3. And more say they're worried about the consequences of shortages; 74% say they'll have a moderate to high impact on their business, up from 63% in Q3 and two points higher than a year ago.

This year's index has surely been colored by the pandemic, which throttled a lot of construction activity initially and continued to breed uncertainty as it surged and receded through the year. Predictably, that has produced ripple effects on building material supply chains that are seemingly still coursing through the system. Many contractors say the pandemic bears a lot of the blame for challenges in securing building products and materials; 41% says that's been a severe byproduct.

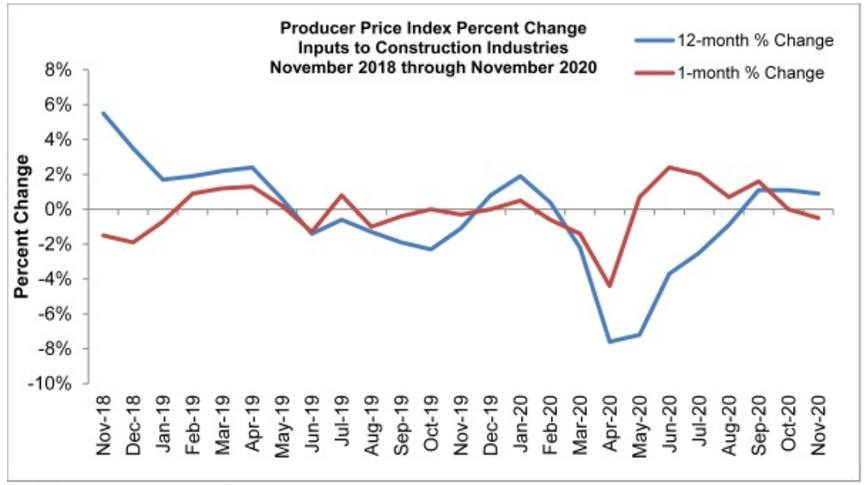
Wood/lumber has been the most volatile material thanks to a housing construction boom, and it tops the CCI list with most mentions for short supply at 31%. But materials used by electrical contractors ranked right below it – 11% said electrical products other than copper wire were in short supply and 10% mentioned lighting products.

Contractors might have cause for worry about materials pricing heading into 2021. Gordian, which recently released its RSMeans 2021 construction costs database, says 90% of material, equipment and labor costs changed during the year, with 57% of construction materials increasing in price. The database includes a short video presentation highlighting some of the areas of cost spikes. Some examples: construction-grade lumber is up 56%; copper, 26%; copper cable and conductors, 20%; EMT conduit, 2.3%; panelboards, 1%. *Electrical Marketing*'s Electrical Price Index for November shows aggregate prices on about 30 electrical products up about 2% in 2020.

"Our electrical engineering expert says the major problem this year has been not shortages, but instead, price changes," says Bob Mewis, principal engineer with Gordian.

Gordian calls the fluctuation in construction costs in 2020 "unusual," and says, "it's clear construction will cost more in 2021."

Another view comes from Associated Builders and Contractors (ABC). Its most recent data from November show construction input costs plummeted from January through April, quickly rebounded through late August before flattening but ended November just 0.9% higher than a year earlier (see **Chart** below). But Chief Economist Anirban Basu cautions that an end to the pandemic could set the stage for a cost surge as building activity resumes en masse. There's a possibility of "rapidly rising input prices at some point next year."



Source. U.S. Bureau of Labor Statistics

But the pandemic may leave a lasting impact on construction costs beyond materials. New job-site protocols for keeping viruses at bay are sure to add to construction costs, enough so that the RSMeans 2021 cost database incorporates specific related line-item costs and modifiers. They're significant enough, says Chief Product Officer Noam Reininger, that "anyone estimating the cost of construction work in 2021 is affected by significant cost changes."

TROPHY JOBS 2021

A quick look at some of the most interesting construction jobs now underway or scheduled to break ground in 2021

BY JIM LUCY, EDITOR-IN-CHIEF OF *ELECTRICAL WHOLESALING*

Although it's been a tough year for the construction market, *EC&M*'s editors found a surprising number of high-profile construction projects across the United States that either recently broke ground or will be underway soon. When you consider that the electrical portion of the typical construction project is roughly 10% of the total project cost, you can see why they will provide electrical contractors and others in the electrical construction community with plenty of revenue potential in 2021.

The **Table** highlights more than 40 projects. Many of these are in niches of the construction market that have been quite active over the past few years, including data centers, airports, light-rail, mixed-use urban redevelopment projects, and warehouses/distribution centers. And while the construction of single-family housing developments individually doesn't represent the same type of dollars as these trophy jobs, all construction economists expect single-family housing to be one of the fastest-growing market segments for 2021. The National Association of Home Builders (NAHB), Washington, D.C., forecasts single-family housing starts to increase 4.7% to 1.03 million starts this year, with the hottest local markets in the Sunbelt and Intermountain region.

The biggest trophy jobs now under construction include the $4-billion mixed-use National Landing project to be constructed

TOP CONSTRUCTION PROJECTS TO WATCH IN EARLY 2021

Contract Value ($ Millions)	Project	City	State	Project Type	Status	Source
4,000	National Landing near Amazon HQ2 mixed-use development	Northern Virginia	Va.	Mixed-use	Planning	constructiondive.com
2,000	MA Partners' Elevon residential community with more than 1,000 single-family homes	Lavon	Texas	Single-family/ Mixed-use	Land acquired	dallasnews.com
1,300	1.4-million-sq-ft One Madison Ave. office tower	New York	N.Y.	Office tower	Broke ground - Nov. 2020	constructiondive.com
1,200	Traverse Wind Energy Center, a 999MW wind facility	Blaine, Custer, and Kingfisher Counties	Okla.	Renewables	Broke ground - Dec. 2020	construction.com
1,100	Terminal at Pittsburgh International Airport	Pittsburgh	Pa.	Airport	Construction to start in 2021	patch.com
1,000	Three Rivers Natural Gas Power Generating Energy Center	Morris	Ill.	Energy	Broke ground - Dec. 2020	construction.com
1,000	Potomac Yard	Alexandria	Va.	Mixed-use	Breaking ground - Jan. 2021	businesswire.com
940	Richard Boulevard Office Complex	Sacramento	Calif.	Office	Broke ground - Nov. 2020	construction.com
615	Baptiste Health Care	Pensacola	Fla.	Hospital	Broke ground - Nov. 2020	hconews.com
600	Gulf Coast Ammonia Plant	Texas City	Texas	Industrial	Broke ground - Dec. 2020	construction.com
555	West Lake Corridor Project: 8-mile extension of the Northern Indiana Commuter District's South Shore rail line	Dyer	Ill.	Mass Transit	Broke ground - Dec. 2020	construction.com
400	Veyoel Moshe Gardens Residential	Kiryas Joel	N.Y.	Multi-family	Broke ground - Dec. 2020	construction.com
400	Downtown revitalization	Kenosha	Wis.	Mixed-use	Planning state	costar.com
392	Penn Station's Long Island Railroad (LIRR) concourse	New York	N.Y.	Mass Transit	Contract awarded	usa.skanska.com
377	Hyatt Regency Salt Lake City at the Salt Palace Convention Center, 25-story, 700-room hotel	Salt Lake City	Utah	Hotel	Underway	deseret.com
341	Orlando Health Jewett Orthopedic Hospital	Orlando	Fla.	Hospital	Broke ground - Dec. 2020	construction.com
325	University of Massachusetts Education and Research Building	Worcester	Mass.	Educational-College & University	Broke ground - Dec. 2020	construction.com
200	300M NE Street mixed-use building	Washington	D.C.	Multi-family	Broke ground - Dec. 2020	construction.com
200	24-story office building with First National bank as anchor tenant	Pittsburgh	Pa.	Airport	Construction to start in 2021	patch.com
175	Simone Residential Tower	San Diego	Calif.	Multi-family	Broke ground - Nov. 2020	construction.com
167	AVA Arts District Live/Work Complex	Los Angeles	Calif.	Multi-Family	Broke ground - Dec. 2020	construction.com
125	Adams & Grand mixed-use project near USC campus	Los Angeles	Calif.	Mixed-use	Funding stage	globenewswire.com
124.5	Hartsfield-Jackson Atlanta Airport extension	Atlanta	Ga.	Airport	Contract awarded	usa.skanska.com
123	Scotts Run apartments	Tysons	Va.	Multi-family	Broke ground - Nov. 2020	construction.com
117	Clarendale Six Corners, a 258-unit senior living project in Chicago's Six Corners retail district.	Chicago	Ill.	Multi-family	Financing complete	multihousingnews.com
103	Hanover Wellesley Residential	Wellesley	Mass.	Multi-family	Broke ground - Nov. 2020	construction.com
100	St. Anton Tasman affordable housing development	Santa Clara	Calif.	Multi-Family	Broke ground - Jan. 2021	globalconstructionreview.com
80	Presidio of Monterey military installation	Seaside	Calif.	Single-family	Broke ground Jan. 2021	dvidshub.net
63	Elkhart County court building	Goshen	Ind.	Courthouse	Developer selected	wsbt.com
60	Socorro Independent School District (ISD)	El Paso	Texas	Education - K-12	Broke ground - Jan. 2021	ktsm.com
42	Morrison Yard, a new 10-story Class A office space	Charleston	S.C.	Office	Contract awarded	businesswire.com
NA	J.G. Petrucci Co. broke ground in 4Q 2020 on 2 million sq ft in multiple warehouse projects	Multiple sites	N.J.& Pa.	Warehouse/ distribution center	4Q 2020	njbmagazine.com
NA	141,600-sq-ft distribution center	Melbourne	Fla.	Warehouse/ distribution center	1Q 2021 planned groundbreaking	floridatoday.com
NA	Brightline West high-speed rail project between Apple Valley and Las Vegas	Apple Valley	Calif.	Mass Transit	Groundbreaking planned for 2Q 2021	vvdailypress.com
NA	South Texas Health Systems Edinburgh's 5-story patient tower	Edinburgh	Texas	Hospital	Broke ground - Dec. 2020	bizjournals.com
NA	8W in solar power to be generated by community solar gardens	Denver	Colo.	Renewables - Solar	Planning stages	altenergymag.com
NA	39-story, 448-ft luxury apartment Kensington Tower	Salt Lake City	Utah	Multi-family	Planning stage	stltrib.com
NA	28-story office tower designed by BIG	Houston	Texas	Office	Contract awarded	usa.skanska.com
NA	Office-retail development near Gateway Airport	Mesa	Ariz.	Office-retail	Planning	eastvalleytribune.com
NA	Silicon Ranch solar farm with 300,000-plus panels to generate electricity	Stewart County	Ga.	Renewables - Solar	Planning stage	constructionreviewonline.com
NA	Red Stag Fulfillment campus of distribution center	Sweetwater	Tenn.	Warehouse	Plans announced	wbir.com

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near Amazon's HQ2 headquarters across the Potomac River from Washington, D.C., and the $1-billion Potomac Yard project to be built near Reagan National Airport in northern Virginia. The Potomac Yard project will include a satellite campus for Virginia Tech University.

In recent years, the Big Apple has also been a hotbed of construction activity, with New York's Hudson Yards mega-project; LaGuardia Airport renovation and plans for a major expansion at JFK Airport; redevelopment of Penn Station; and the crazy amount of luxury condo construction. While Manhattan's construction scene has cooled off, the recent start of the $1.2-billion One Madison office tower and the upcoming $392-million renovation of the Long Island Railroad concourse at Penn Station will also represent major electrical construction potential.

A little further down the road, we also expect to see big-time construction opportunities for electrical professionals in three different areas:

- Utility-scale and local energy storage projects.
- On-shore support facilities for upcoming offshore wind farms along the East Coast.
- Large-scale installation of electric vehicles chargers.

Utility-scale storage. Electric utilities are starting to use massive battery banks to store the power produced by solar and wind farms, and over the next few years at least 10 of these storage projects rated at more than 150MW will break ground. Tesla is getting very involved in this area.

Support facilities for offshore wind farms. While large European firms with a specialty in offshore wind will handle most of the construction and installation of the offshore wind turbines, these installations will require large onshore staging areas at ports to handle the logistics of storing and transporting materials to these wind farms.

Electric vehicle charging systems. As more auto manufacturers begin producing electric vehicles over the next decade, the installation of EV chargers in residential, commercial, industrial, and institutional applications will require massive amounts of electrical construction materials. Electrical contractors stand to profit from this trend in a big way (read related article on "EV Installations Offer New Revenue Streams for Electrical Contractors"). According to a research report published by Allied Market Research, the global electric vehicle charger market generated $3.8 billion in 2019, and is estimated to reach $25.5 billion by 2027, a compound annual growth rate (CAGR) of 26.8% from 2020 through 2027.

Each local market will enjoy new revenues from the construction niches discussed in this article, so it's important for electrical contractors and other electrical professionals to be in touch with the design and architectural firms as early in the design and build process as possible to identify potential new business opportunities.

Amazon recently released renderings from the NBBJ architecture firm for "the Helix," part of its multi-billion HQ2 headquarters at the National Landing project in Arlington, Va. The project will include 2.8 million sq ft of new office space in three 22-story buildings. Over the next decade, the company expects National Landing to create 25,000 jobs.

Amazon / NBBJ

WHO'S USING FIBERGLASS CONDUIT AND WHY

BY CHAMPION FIBERGLASS

Several years ago, "Who's using fiberglass conduit?" was a common question. Today, if you're anywhere near a bridge, tunnel, wastewater treatment plant, or data center, there's a good chance you're near fiberglass conduit, a.k.a. RTRC.

Why are so many industries choosing fiberglass over other conduit materials like PVC SCH 40 and SCH 80, PVC-coated steel and GRC? Let's clarify why engineers in so many industries are increasingly specifying fiberglass conduit—Champion Fiberglass conduit specifically—to help them solve their challenges.

Electrical conduit materials have distinctive characteristics that drive them to be a preferred material depending on the project needs. For example, GRC provides impact protection, but it is heavy, expensive, and subject to corrosion. PVC conduit is lighter, but is subject to burn-through and releases harmful toxins when burning. On the other hand, fiberglass conduit is lightweight, resists corrosion, and does not burn-through or release toxins when burning.

THE PROBLEM WITH PVC

Currently, another issue is at play with PVC conduit that demands consideration. There's a worldwide shortage of PVC base materials that's affecting production of PVC conduit. It is causing significant price increases as well as delays. And product delays cause project delays that affect outcomes on the calendar and in the pocketbook.

Champion Fiberglass conduit can be used in many applications in place of PVC conduit. In addition to competitive pricing and short lead times, it offers lower labor installation costs as illustrated in the NECA Manual of Labor Rates for faster, more cost-efficient installation.

Fiberglass conduit also offers a lower cable coefficient of friction enabling longer cable pulls. Additionally, there's no elbow burn-through with fiberglass conduit so there are fewer repairs. Plus, it's got greater impact resistance compared to PVC to protect infrastructure.

SUCCESSFUL OUTCOMES ACROSS APPLICATIONS

So now that we've established why customers are using fiberglass conduit instead of alternatives, let's go deeper into the industries that are seeing successful project outcomes.

THE TRANSPORTATION INDUSTRY RELIES ON FIBERGLASS CONDUIT FOR ENHANCED ELECTRICAL SAFETY IN TUNNELS.

The challenge:

A constant need for up-to-code materials meeting stringent electrical and fire safety requirements.

Champion Fiberglass solution:

Champion Fiberglass is the only producer of phenolic conduit that meets UL 2196 requirements, withstanding fire at 1850°F for two hours.

See it in action:

See how Champion Fiberglass extinguished safety concerns when the Elizabeth River Tunnel replaced fire-susceptible galvanized rigid steel with Champion's Phenolic conduit.

WASTEWATER TREATMENT PROJECTS REQUIRE SUPERIOR CORROSION RESISTANCE.

The challenge:

Constant exposure to caustic environments can wear on materials, so it's important to specify a conduit that can stand up to ambient environments in the long run.

Champion Fiberglass solution:

Fiberglass conduit can be engineered to resist corrosion and other environmental and operational challenges – offering up to 3x the lifespan of PVC-coated rigid steel.

See it in action:

See how Champion Fiberglass replaced corroding PVC-coated rigid steel conduit to keep Fox Metro Wastewater Treatment Plant up and running.

UTILITY CLIENTS FIND VALUE IN ITS LOW COEFFICIENT OF FRICTION.

The challenge:

Any project requiring miles of cable runs has to consider coefficient of friction and possibility of burn-through when spec'ing materials.

Champion Fiberglass solution:

Champion Fiberglass conduit features the lowest coefficient of friction on the market.

See it in action:

Get the details on how Champion Fiberglass conduit's low coefficient of friction led to savings for Duke Energy's Edwardsport IGCC plant.

THE INDUSTRIAL SECTOR USES FIBERGLASS FOR ITS LIGHTWEIGHT AND FAST, EASY INSTALLATIONS.

The challenge:

Material cost and speed of installation are key for owner engineers and contractors alike for both underground conduit and above-ground conduit installations.

Champion Fiberglass solution:

Champion Fiberglass conduit is 15x lighter weight than PVC-coated steel and features labor costs that are 5x lower – without sacrificing safety or strength.

See it in action:

Learn more about how Champion Fiberglass provided Texas A&M University with on-time, on-budget electrical conduit solutions for Kyle Field.

THE DATA CENTER SECTOR ENJOYS THE BENEFITS OF A RELIABLE ELBOW ALTERNATIVE WITHOUT THE RISK OF BURN-THROUGH

The challenge:

The cabling infrastructure of any modern data center must counteract both high costs and the possibility of underground faults and burn-through.

Champion Fiberglass solution:

Because of Champion Fiberglass conduit elbows' low coefficient of friction and cost efficiency, they're a perfect fit for any data center's cable array.

See it in action:

Get the numbers on how Champion Fiberglass elbows saved one data center client over $470K.

Of course, most of these benefits apply across industries. Because Champion Fiberglass conduit is a lighter, more cost-effective material than PVC-coated steel and GRC, it offers immediate benefits—from lower manpower costs to easier, safer installations. Whatever the industry, it's likely projects will benefit from incorporating Champion Fiberglass conduit into project specifications.

BIM/REVIT MODELS MAKE PROJECT PLANNING EASY

Another advantage to using Champion Fiberglass conduit is access to BIM/Revit models. BIM/Revit models make it easy to engage project teams for planning, design, construction, and management of infrastructures, buildings, and sites. From initial design through construction, fiberglass conduit BIM models and information contribute to project success by creating purchasing efficiencies, improving product compatibility, and increasing overall project efficiency. The availability of BIM/Revit models really help enhance project planning for seamless collaboration throughout the life of a project.

Source: Texas A&M University Kyle Field

AN EXCEPTIONAL PRODUCT. UNMATCHED SERVICE.

Each of these case studies illustrates a time when Champion Fiberglass worked closely with a client to ensure the outcome was not just satisfactory, but above and beyond expectations. That's one benefit of working with Champion Fiberglass. Whether you're above ground or below, in a highly corrosive environment or not, Champion's goal is the same: to deliver unmatched service paired with a product that provides solutions – no matter where or how you're using it.

THE ROAD TO RECOVERY

A construction-only approach will not safeguard the future of the construction industry. Here are three predictions that will help shape a recovery in 2021.

BY KENNY INGRAM, IFS

Not only did the pandemic cause widespread disruption for the construction industry in 2020, but it has also seriously impacted the number of construction projects being executed in 2021. As a result, the focus is now on looking at ways to "future-proof" construction businesses to navigate uncertain times going forward. However, I'm a strong believer that, in addition to improving productivity, construction companies must also explore new technologies and revenue streams.

According to a recent IFS study, despite the pandemic disruption, 75% of surveyed engineering, construction, and infrastructure organizations have maintained or increased their digital transformation spend. So, although an exact time frame for when the construction market will ultimately recover remains uncertain, companies are using this quiet period to explore digital transformation initiatives to ensure they're ready to begin operations quickly when the market recovers.

Recovery is at the heart of every company's contingency plan for 2021 — maximizing revenues and increasing process efficiencies will be key. Following are some key trends I believe will help move the industry toward recovery this year:

1. BIM ENTERS A NEW DIMENSION.

Building Information Modeling (BIM) and its benefits are well known among those in the construction and engineering sector. As a stand-alone technology for 3D design, it has had a huge impact on how complex assets are being developed and built. Some industry stakeholders are currently talking about 4D BIM, which also takes the time and scheduling aspect into account, basically giving companies a video simulation of how (and in what order) an asset should be constructed.

What is not a very mature concept, however, is the combination of BIM with enterprise resource planning (ERP) software, which is where most crucial business data is stored. This lack of sophistication is odd, given the enormous potential in connecting the two — enter 5D BIM.

With the fifth dimension being money, I predict that the challenges of 2020 will provide added incentive for companies looking to bridge the gap between BIM and ERP. The question is how to take a BIM model and turn it into a cost estimate — and then track the actual costs back to the BIM objects.

Moving away from the traditional bill of quantities, companies are now being asked to bid against a BIM model — a cumbersome process that typically involves a myriad of manual calculations and measurements. As 5D BIM comes to the forefront, I predict companies will start demanding automated tools for transferring BIM models straight into the estimate module of their ERP software. They will expect standard integrations that enable a free flow of data between the different systems. What will be needed are integrations that enable the bid teams to sort and structure the data by type of component, separate them into packages of work, and automatically price each package.

Many industry stakeholders are currently talking about 4D BIM, which takes the time and scheduling aspect into account, basically giving companies a video simulation of how (and in what order) an asset should be constructed. The potential of 5D BIM, however, is the combination of BIM with enterprise resource planning (ERP) software, which is where most crucial business data is stored.

Trailblazers within the construction industry that are already implementing (or trialing) 5D BIM/ERP integrations will use their head start to investigate the sixth dimension of BIM: maintenance. At this stage of the maturity cycle, the visualization element of BIM takes a subordinate role to the free flow of information throughout the life cycle of the asset — from design to build to maintenance. While still a few years out, I predict a rapid progression to 5D and 6D BIM.

2. THROUGH-LIFE SERVICE REPLACES TRADITIONAL CONSTRUCTION-ONLY APPROACH TO PROJECTS.

The financial impact of the pandemic on the construction industry means that reliable and robust revenue streams have become critical for construction companies. This has led many to transform themselves from traditional organizations to asset life cycle service providers, able to provide through-life service, facilities management, and maintenance to their clients.

The outcome is a strengthened emphasis on total life cycle cost rather than the traditional, one-and-done build cost. One of the major implications is the profound shift in focus among the companies building the assets. As they will be increasingly expected to assume cradle-to-grave service responsibility for each asset they build, they will need to focus on asset quality, longevity, and ease of maintenance. Put more provocatively, now that the asset is the construction company's problem, it will need to be designed for quick and easy repair and maintenance.

As customers are more and more interested in buying outcomes rather than brick-and-mortar assets — for example, hospital beds rather than the building that houses them — construction companies will need to get used to providing an all-encompassing service offering.

A majority of stakeholders in the construction and engineering space are still doing business through two separate contracts — one to build and one for service. This year, however, I predict we will see an increase in the number of companies transitioning to a single contract that spans the entire life cycle of the asset while regulating its output or availability.

A move to total asset life cycle responsibility will mean a complete overhaul of business models as companies will need to extend their planning horizons significantly to ensure long-term profitability. Even if they have competent staff to attempt this transformation, it is likely many will initially struggle to establish best practices in service processes that will ensure delivery of new-to-them concepts, such as customer

A move to total asset life cycle responsibility will mean a complete overhaul of business models as companies will need to extend their planning horizons significantly to ensure long-term profitability. One way to solve this is to look at enterprise software designed to power the transformational journey from construction-only to through-life service provision.

engagement, service-level agreements (SLAs), and field service scheduling and optimization. One of the ways to solve this is to look at enterprise software designed to power the transformational journey from construction-only to through-life service provision.

3. OFFSITE CONSTRUCTION BRINGS SUPPLY CHAIN MANAGEMENT INTO FOCUS.

An increasingly popular trend within the industry is offsite construction or prefabrication. Whereas construction companies used to build a house using materials shipped to the site, many companies today are moving the actual construction to factory-like, indoor environments where tradespeople and contractors build components or modules that are shipped to and assembled on the building site. One of a vast number of examples of this trend is engineering firm Babcock, which delivered prefabricated components to the Heathrow Terminal 5 project.

This style of construction requires much more complex logistics for each build than traditional on-site building methods; therefore, we will see a significant uptick in companies focusing on implementing supply chain management best practices. The vast majority of traditional construction companies will admit to having very little experience in working with things like parts numbers and inventory. The supply chain-centric work processes of a company like Amazon will not reflect the current reality of their businesses. Yet, this is the vocabulary they will need to learn (very quickly) in order to effectively and profitably manage the logistics challenge of getting hundreds or even thousands of prefabricated components to one or more construction sites — at the right time and in the right order.

I predict the construction industry will see accelerated investments in business software capable of imposing order on a supply chain-driven transformation that would otherwise spin rapidly out of control. Companies will increasingly turn to a manufacturing ethos as they get used to the idea of building standardized components with serialized part numbers that can be used in multiple projects, as opposed to costly, customized solutions.

2021 will be the year when the inexorable march of offsite construction compels traditional construction companies to evolve and come to grips with the urgent need for standardization, both in terms of materials and work processes.

...the challenges of 2020 will provide added incentive for companies looking to bridge the gap between BIM and ERP.

ADDITIONAL RESOURCES:

- Learn more about how Champion Fiberglass can fill your conduit needs during the industry's ongoing PVC shortage: https://championfiberglass.com/pvc-conduit-alternative/
- Check out our conduit calculator to compare material and installation costs of fiberglass conduit to other conduit material costs: https://championfiberglass.com/resources/conduit-calculator/
- Check out our elbow calculator to compare material and installation costs of fiberglass conduit elbows to other elbow material costs: https://championfiberglass.com/resources/elbow-calculator/
- Check out our epoxy adhesive calculator to easily calculate the number of conduit joints and the number of adhesive cartridges your project will require: https://championfiberglass.com/resources/epoxy-adhesive-calculator/
- Find a rep: https://championfiberglass.com/rep/

ABOUT CHAMPION FIBERGLASS

Champion Fiberglass is the electroindustry's answer to heavy, costly conduit. Engineers across industries and applications are increasingly specifying this innovative, cost-efficient epoxy fiberglass conduit. Champion Fiberglass (RTRC) offers all the strength and durability represented by other in-market solutions while also featuring a lower material cost and a lighter weight, contributing to considerable savings. The Champion Fiberglass facility is the most advanced conduit manufacturing facility in the United States, delivering a range of leading-edge products that consistently contribute to project savings.