

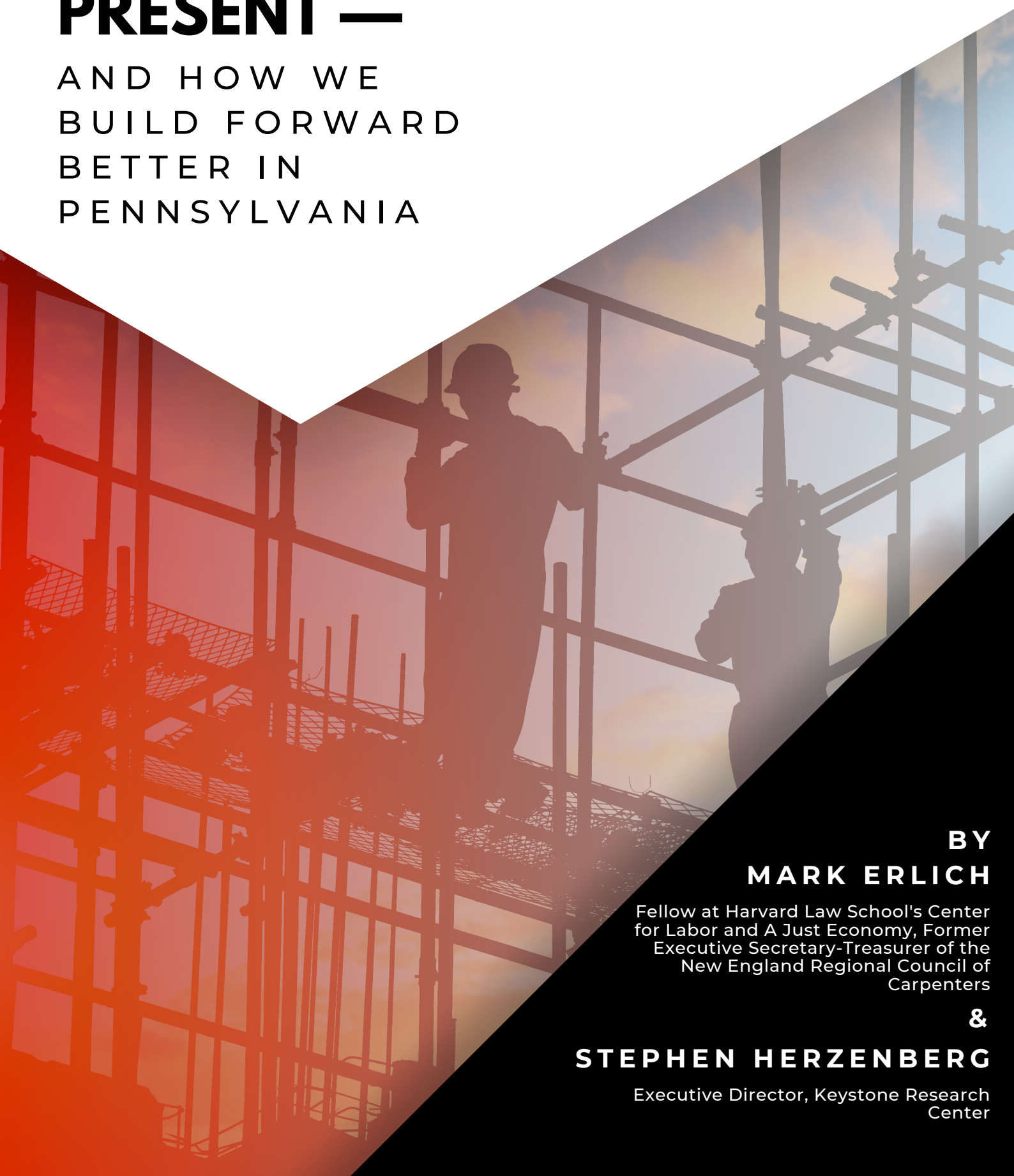
CONSTRUCTION PAST AND PRESENT —

AND HOW WE
BUILD FORWARD
BETTER IN
PENNSYLVANIA

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KEYSTONE
RESEARCH
CENTER



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Executive Summary

This Keystone Research Center report contains an overview of a new book published this summer by the University of Illinois press, *The Way We Build: Restoring Dignity to Construction Work*.¹ This report also documents, in the last section, the applicability of the book's central arguments to Pennsylvania and sketches how policymakers and construction unions can help "restore dignity to construction work" in the Keystone state.

At the national and state level, *The Way We Build*, and this report, offer an evidence-based appeal for concerted and coordinated action by policymakers, regulators, enforcement agencies, and industry stakeholders (unions and workers, contractors, and construction customers ("owners")) to "build forward better" in construction. This action could improve job quality for all demographic groups, increase safety, and raise productivity and quality benefiting construction customers, including government, and thus taxpayers.

The book and this report also serve as an illustration of a general approach to key industries that government at every level should pursue. This general approach requires, first, developing a grounded, holistic understanding of the industry and of the alternative scenarios—or paths—along which each industry could develop. This approach requires, second, using every tool through which government impacts an industry to build forward better, creating better jobs and greater equity, higher performance, and increased safety and environmental sustainability.

The Way We Build and, in abbreviated form, this report, describe the historical and political developments that have eroded, over the past 50+ years, the quality of construction jobs in the United States—an estimated more than 11 million jobs today (counting those in the underground economy). The power of building and construction trades unions in the late 1960s, in conjunction with rapid wage increases negotiated in collective bargaining, and high strike rates, triggered an explicit effort to weaken unions by big corporations including repeat buyers of construction services (such as Dupont). These corporations:

- Encouraged the expansion of the Associated Builders and Constructors (ABC), an association of non-union contractors.
- Catalyzed a shift in project management away from "general contractors" that used to employ carpenters, laborers, and some other trades—and had ongoing relationships to workers and to subcontractors because general contractors collaborated with trade and subcontractors on multiple projects over time. In place of general contractors emerged "construction managers" who did not employ trades workers and who enforced the owners' interests in low costs and in resisting mid-project cost hikes ("change orders").
- While they couldn't repeal the federal Davis-Bacon prevailing wage law, joined with ABC and other anti-union organizations to repeal 15 state prevailing wage laws.

¹ Mark Erlich, *The Way We Build: Restoring Dignity to Construction Work*, University of Illinois Press, July 18, 2023; <https://www.press.uillinois.edu/books/?id=p087332>. While this report contains references, more complete references can be found in the book. Stephen Herzenberg of Keystone Research Center (KRC) drafted this executive summary and the final section of the report on Pennsylvania. KRC's Claire Kovach extracted the Pennsylvania (and comparative US) data in the last section.

In the late 1970s, lobbyists convinced Congress to enact an obscure change to Internal Revenue Service (IRS) regulations that gave a green light to construction contractors to misclassify workers as independent contractors—saving an estimated 30% in tax and insurance obligations—because many of their competitors were already misclassifying workers. A decade later, in the context of growing undocumented immigration, large parts of the construction labor market deregulated further, doing away with 1099 forms (filed annually for independent contractors) and other paperwork, and converting to cash economy arrangements.

- Over 40% of such workers surveyed in Texas reported routine nonpayment of overtime and, in many cases, nonpayment of wages.
- A recent national report estimates that between 12.4% and 20.5% of the construction workforce (up to 2.2 million workers) is improperly classified or working under the table.

A plunge in productivity accompanied the shift to a poorly trained, inexperienced workforce: while productivity in all U.S. industries doubled from 1964 to 2004 it fell by 10% in construction.

Looking forward, a host of new technologies including “Building Information Modeling” (BIM) have begun to penetrate construction alongside a renewed interest in factory-built housing—overhyped in the past—and increased use of modular construction and “prefabrication.” The same forces that have contributed to low productivity in the past—the fragmentation and lack of capital of most contractors and the lure of a vulnerable low-wage workforce—could, however, hold back the deployment of new technology. By contrast, policies that improve job quality could benefit the industry by unblocking the potential synergies between new technology and well-trained, experienced workers.

This report’s last section details seven complementary ways that Pennsylvania could build forward better in construction.

- Fleshing out a more detailed, research-based picture of the PA construction industry, including alternative future paths, so that policy can be designed to achieve a more productive, higher skill path.
- Maintaining and strengthening labor standards, like prevailing wage laws, including on expanding renewable energy and climate projects.
- Enacting local and state “responsible contractor” laws that reward contractors with robust apprenticeship programs, good safety records, and no history of legal violations.
- Promoting a coordinated state-local-stakeholder effort to enforce labor standards.
- Giving priority to responsible contractors in awarding subsidies for new hires through the new five-year, \$400 million Commonwealth Workforce Transformation Program.
- Make Pennsylvania a leader in diversifying the pipeline to union construction careers.
- Explore industry-government cooperation to accelerate construction industry innovation.

The deliberate attack on construction unions that began around 1970 has served neither the industry nor its customers well. By contrast, a deliberate and strategic effort to promote a high-wage, high-skill construction industry would serve workers, law-abiding contractors, and construction customers well. Pennsylvania should seek to model for the nation the benefits of such an approach.

Snapshot of the U.S. Industry

Construction may be the most visible of all industries. From the sight of laborers digging foundations for suburban tract developments to the tower crane operators setting materials on the upper floors of urban skyscrapers, bystanders can watch and marvel at the collaborative effort that goes into the creation and repair of homes, buildings, roads, and bridges. Most people operate out of sight behind office doors, storefronts, and factory walls, but construction workers can be seen every day in every community practicing their crafts. Yet the terms and conditions under which they labor are largely unknown and invisible.

As has long been true, today's building industry is an important element of the nation's economy. Construction is a \$900 billion business, representing over 4% of the total Gross Domestic Product and engaging over 11 million workers.² The availability of work is volatile and unstable, with annual seasonal swings and extreme boom and bust multi-year cycles. As a result, construction unemployment rates are typically double that of the general population since workers routinely search for new jobs after projects are completed or miss work due to inclement weather. The industry's sensitivity to financial trends and fluctuating interest rates have often made it a barometer for general economic activity, as it enters and exits recessionary periods ahead of most other industries.

Life in the trades is dangerous. More construction workers die from work-related injuries and falls than in any other industry.³ Though the fatality rate decreased between 1992 and 2011, it has increased since then, largely attributable to the steady erosion of safety levels on sub-standard job sites and limited regulatory enforcement.⁴ In 2015, for example, OSHA federal inspectors visited only 2.7% of all construction establishments.⁵

The demographic makeup of the industry is in transition. Once a bastion of white male workers, the percentage of African Americans is still only 6%. But the number of Hispanic workers (tracked separately by the Census) has tripled in the last 30 years, climbing from a 9% share of the construction labor force in 1990 to 30% in 2020.⁶ That steep increase underestimates the true level of participation since many documented and undocumented Hispanics work in the unrecorded underground segment of

² For construction's share of GDP, see https://www.bea.gov/sites/default/files/2021-03/gdp4q20_3rd.pdf. The 11 million estimate comes from <https://data.census.gov/cedsci/table?q=workers%20by%20industry&t=Industry&tid=ACSDT1Y2019.B24070&vintage=2018>. It includes *all* workers in the industry, i.e., employees, legitimate independent contractors, misclassified independent contractors, and those who are paid off the books.

³ In 2021, construction had 986 fatal injuries, 10 more than transportation and warehousing. TABLE A-1. Fatal occupational injuries by industry and event or exposure, all United States, 2021; <https://www.bls.gov/iif/fatal-injuries-tables/fatal-occupational-injuries-table-a-1-2021.htm>.

⁴ U.S. Bureau of Labor Statistics. Work-related injuries and illnesses database: <http://www.bls.gov/iif/>.

⁵ Bureau of Labor Statistics, *Labor Force Statistics from the Current Population Survey*, 2020.

⁶ Claire McAnaw Gallagher, "The Construction Industry: Characteristics of the Employed, 2003-20," April 2022; <https://www.bls.gov/spotlight/2022/the-construction-industry-labor-force-2003-to-2020/home.htm>. See also CPWR, The Center for Construction Research and Training, *The Construction Chart Book*, Sixth Edition, eChart Book, 2018, Chart 16a, https://www.cpwr.com/wp-content/uploads/publications/The_6th_Edition_Construction_eChart_Book.pdf.

the industry. Women continue to remain underrepresented, comprising only 2.4% of “production workers” (which primarily consist of the blue-collar trades).⁷

While these statistics paint an accurate aggregate picture, construction is a highly segmented industry. There is no primary stabilizing force comparable to sectors in which a few large companies establish uniform ground rules for buying and selling products and labor. Construction consists of millions of firms ranging from global giants to sole proprietors. The top 50 U.S. contractors earn over \$2 billion in annual revenues but the industry is dominated by local or regional businesses with a local workforce.⁸ In fact, nearly 70% of construction firms operated from home in 2012.⁹ General contractors typically focus on particular sub-sectors, such as residential, commercial, institutional, utility, or heavy and highway projects but often only employ management and office personnel, superintendents and a limited number of trades workers, relying instead on the vast array of small and medium-sized sub-contractors that specialize in a single or few trades and, despite their size, employ the majority of the overall field workforce.

From a worker’s perspective, there is one major dividing line—union status. Through the first 70 years of the twentieth century, the nation’s buildings and highways were largely union built – private and public projects, non-residential and even many residential developments. Union hegemony provided the foundation for beneficial contracts that nearly tripled real wages from 1947 to 1972. Since then, average real wages for construction trades workers have plummeted by an astonishing 15%, a function of the decline in union density and the parallel growth of the lower-waged non-union sector.¹⁰ In 1983, 28% of wage and salary workers in construction were union members; by 2022 that number had dropped to 12.6%.¹¹

Construction takes place in a bifurcated setting. Union members in large cities in the Northeast, Midwest, and West Coast continue to enjoy high hourly wages, health insurance, retirement security, and well-monitored working conditions. They work on publicly funded prevailing wage jobs and large privately financed projects and frequently wield political influence at the municipal and state levels. However, below the Mason-Dixon line, in the Southwest, Rocky Mountain states, and in suburban and rural communities across the country most trades work in an environment of low pay, unsafe conditions, few or no benefits, no collective voice, and periodic wage theft. In 2019, the average wage of union construction workers was 49.2% higher than their non-union counterparts, and the gap would be greater if the generous value of union benefits were included and contrasted to the low compensation for those non-union workers in the underground economy whose existence may not be captured by Census studies.¹²

⁷ CPWR, *The Construction Chart Book*, 2018, Chart 19c,

⁸ <https://www.statista.com/statistics/234153/the-largest-us-construction-contractors-based-on-contracting-revenue/>.

⁹ U.S. Census Bureau. 2012 Economic Census. Survey of Business Owners.

¹⁰ Source: analysis of Current Population Survey data by Russ Ormiston.

¹¹ <http://www.unionstats.com>.

¹² <http://www.unionstats.com>. The (unadjusted) union wage premium in the construction industry shrank to an average of 34.4% in the next three, pandemic-impacted years.

How Did We Get Here?

Over the course of the 20th century, building trades unions injected a semblance of order into the chaotic and sometimes cut-throat construction industry. Unions have overseen the entry of new workers into the industry and referred workers to contractors on an as-needed basis, delivered training programs, coordinated their members' health and retirement security benefits plans, and formalized dispute resolution mechanisms to handle the inevitable day-to-day conflicts that arise in a fast-moving business. For the most part, contracting employers tolerated and even welcomed the unions' comprehensive intervention in labor relations. Union administration freed contractors to focus on business development, estimating, project management, and bill collecting. In addition, many of the smaller subcontractors were often former union members who perceived their success as linked to the smooth functioning of the unions' programs.¹³ Given the sizable number of small employers with limited capacity to manage employment issues, building trades unions functioned as the equivalent of the human resource departments for an entire industry, regulating the labor market to the benefit of employers as well as workers.

Periodically, large business owners attempted to wrest power from the unions but their short-term one-off participation on a single project served as an impediment to a sustained, focused campaign. In 1969, however, a group of executives from some of the nation's major corporations—repeat purchasers of construction services—formed the Construction Users Anti-Inflation Roundtable, to be renamed the Business Roundtable in 1972. Prior to becoming one of the country's principal corporate voices on national policy discussions, the organization's founding goal was to reduce inflationary building costs and rein in what was perceived as excessive union power in the building trades, namely, the strength to elevate wages and to control the day-to-day culture of the job site.¹⁴ These corporate heavyweights wanted to realign the interests and power relations between owners, contractors, and unions. The long-standing and relatively stable system of labor relations may have been effective in terms of developing and retaining a skilled workforce, but owners chafed at the power ceded to the unions. Nearly one-fourth of all worker days on strike in 1969-70 occurred in the construction industry. In 1972, construction accounted for one-half of all major strikes.¹⁵ The combination of a building boom, the strike wave, and labor shortages due to the number of young men overseas in Vietnam resulted in a series of unusually high union wage increases. In 1970, Edwin Gott, of US Steel, claimed that the most serious problem affecting the overall economy was "the effect of the high costs of labor settlements in the construction industry."¹⁶

The Roundtable issued a series of reports titled "More Construction for the Money," in which they bemoaned the "inordinate fragmentation" of the industry. In the absence of cost-effective management systems, the reports concluded that "the big losers are owners."¹⁷ The Roundtable proposed a

¹³ Mark Erlich, *With Our Hands: The Story of Carpenters in Massachusetts*, Philadelphia, Temple University Press, 1986; David Weil and Amanda Pyles, "Why Complain: Complaints, Compliance, and the Problem of Enforcement in the U.S. Workplace," *Comparative Labor Law and Policy Journal*, 27(59), June 20, 2006, pp. 59-92; <https://projects.iq.harvard.edu/files/hctar/files/hr08.pdf>.

¹⁴ Marc Linder, *Wars of Attrition: Vietnam, the Business Roundtable and the Decline of Construction Unions*, second revised edition, Fanpihua Press, 2000.

¹⁵ U.S. Bureau of Labor Statistics, "Work stoppages in contract construction, 1962-73," Bulletin 1847; <https://fraser.stlouisfed.org/title/work-stoppages-contract-construction-1962-73-4919>.

¹⁶ "BNA Construction Labor Report," Bureau of National Affairs newsletter, 1970.

¹⁷ Business Roundtable, "More Construction for the Money: Summary Report of the Construction Industry Cost Effectiveness Project," January 1983, 12, 29.

restructuring of industry responsibilities, urging traditional general contractors to re-invent themselves as construction managers with an ultimate loyalty to the owner/user. The construction manager still negotiated a contract with the owner, handled all the subcontracts, and was responsible for coordinating the flow and outcome of the project. But the firm now worked for a fee rather than a lump sum bid thereby shifting the burden of risk—the ability to make or lose money on a fixed estimate—and the responsibility of managing crews to the multiple subcontractors that consequently created a more adversarial relationship between the former partners. The construction manager emerged as a service company that found clients and marketed products produced by subcontractors. Between 1967 and 1997, general contractors' share of direct construction worker employment fell from 35% to 24% of the labor force whereas specialty subcontractors' portion increased from 48% to 63%.¹⁸ A 2000 textbook on project management suggested that the era in which general contractors "performed significant amounts of work with their own forces is largely over."¹⁹ The construction manager was now an extension of the owners' vision and wallet.

The Roundtable's powerful affiliates launched a comprehensive political campaign to limit union impact by selecting non-union general contractors on their projects as a means of subsidizing and promoting the non-union sector. They supported the expansion of the Associated Builders and Contractors (ABC) as a counterweight to the existing union-aligned employer associations. The Roundtable and the ABC attempted, but failed, to deliver sufficient congressional votes to repeal or weaken the Davis-Bacon Act, a 1931 law that mandated hourly wage rates (usually the union scale in each locality) on federally financed construction projects. Instead, they successfully supported efforts to repeal state prevailing wage or "mini-Davis-Bacon" laws. Whereas Davis-Bacon covered public buildings or public works supported by federal dollars, the state prevailing wage laws applied to state and municipal-funded public school, town library, and fire and police station projects. Legislative or referendum-based initiatives to promote repeal gained momentum in the 1970s and 1980s. Nine states executed repeals during the decade beginning in 1979. The pace of repeal is accelerating once again as six more repeals have occurred since 2015. Currently, 24 states never had or now have no prevailing wage law.²⁰ Economist Peter Philips has argued that in construction, the attack on state prevailing wage laws was the equivalent of deregulatory legislation and rule-making in trucking, airlines, and other industries.²¹

Just as significantly, lobbyists were able to convince Congress to enact Section 530 of the Revenue Act of 1978, a measure that granted a "safe harbor" and gave a green light to construction employers that had been classifying their workers as independent contractors based on the argument that a significant segment of their competitors had already adopted the practice.²² The political and legislative developments of the 1970s and 1980s had opened the floodgates for the evolution of a new business model. Using independent contractors on building projects limited risk by shifting the employment burden from the general contractor and primary subcontractors through the expansion of multi-tier subcontracting.

¹⁸ Gerhard Bosch and Peter Philips, *Building Chaos: An International Comparison of Deregulation in the Construction Industry*, Routledge, 2003.

¹⁹ Sidney Levy, *Project Management in Construction*, New York, McGraw-Hill, 2000, p.6.

²⁰ <https://www.dol.gov/agencies/whd/state/prevailing-wages>.

²¹ Mark Erlich, *Labor at the Ballot Box: The Massachusetts Prevailing Wage Campaign of 1988*, Temple University Press 1990.

²² Andrew Seth Kessler, "Independent Contractor Safe-Harbor Rules Await Congressional Amendment," *The Tax Lawyer*, 47(4), Summer 1994, pp. 1077-1088; <https://www.jstor.org/stable/20771648>.

Stan Marek, a Houston-based interior systems contractor, termed Section 530 “by far the most abused change in the history of the IRS” and attributed the destruction of the union sector of the building industry in Texas in the 1980s to the growth of independent contracting enabled by the amended tax code.²³ Newly emboldened non-union contractors lowered labor costs by compensating tradesmen as independent contractors even though their daily tasks and methods of work remained unchanged. The motivation was simple. Contractors could unload as much or more than 30% of labor costs by eliminating tax and insurance obligations, in particular the above-average workers compensation insurance premiums in a dangerous industry. These firms gained a competitive edge over other companies who continued to “play by the rules.” In 1999, the Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA), a union employer group, described the misclassification of employees as “an epidemic in the construction industry.”²⁴ Union companies were contractually prohibited from adopting misclassification schemes since collective bargaining agreements required that their workforce be employees. For non-union contractors that already paid lower wages and provided minimal benefits, however, the temptation to realize significant labor cost savings and to further extend the compensation gap and competitive edge became virtually irresistible.

The legal community quickly moved to create a paper intensive wall of legal protections for contractors classifying their workers as independent contractors. By 2001, this approach had become codified in the American Bar Association’s 2001 Construction Lawyers Guide five-page boilerplate independent contractor agreement that construction contractors could demand their workers sign.²⁵ Though the character of the work remained unchanged in terms of the longstanding legal tests for determining if workers are, in fact, employees or independent contractors, courts accepted the existence of these questionable documents as solely determinant. In one such case, a Pennsylvania federal judge acknowledged that a plaintiff carpenter performed the same work as company employees, was paid hourly as were company employees, and assigned work and evaluated by the same supervisors. The judge nonetheless ruled that, since the company had required the carpenter to sign an independent contractor agreement as a condition of employment, the document alone “tips the scales decidedly in favor of the conclusion that [he] was an independent contractor.”²⁶

The use of misclassification was further expanded by the passage of the 1986 comprehensive Immigration Reform and Control Act (IRCA), a bill intended to stem the flow of migrants crossing the Mexican border into the United States. Many business associations opposed IRCA because it contained penalties against employers who knowingly hired undocumented workers, but the legislation had an unintended consequence. Since the employer sanctions were only triggered if the new hires were employees, one obvious alternative was to hire workers as independent contractors. A 1987 Associated General Contractors (AGC) Q&A sheet on the new law, asked a rhetorical question: “What if I decide just to give up and have no one in my business other than independent contractors and leased employees?”²⁷ In the wake of IRCA, immigration and misclassification became inextricably linked.

²³ Loren C. Steffy and Stan Marek, *Deconstructed: An Insider's View of Illegal Immigration and the Building Trades*, Texas A&M Press/Stoney Publishing Group, November 4, 2020.

²⁴ “BNA Construction Labor Report,” Bureau of National Affairs newsletter, April 28, 1999.

²⁵ Charles Seeman, Edward Hennessey, and Richard Cooper (eds), *The Construction Lawyer's Guide to Labor and Employment Law*, American Bar Association, 2001.

²⁶ “BNA Construction Labor Report,” Bureau of National Affairs newsletter, January 2, 2002.

²⁷ Louis Hyman, *Temp: How American Work, American Business, and the American Dream Became Temporary*, Viking, 2018, p. 252.

As early as 1984, Rice University economist Donald Huddle claimed that one-third of all commercial construction jobs in the Houston area were filled by undocumented workers from Mexico, Central America, and South America. His study suggested that these workers were being treated as independent contractors so that employers could avoid paying taxes.²⁸ According to the many Pew Research Center studies on immigration, the proportion of Hispanic male workers in construction increased four times as fast as the increase of white male workers between 1990 and 2000.²⁹ By the end of 2006, nearly one-third of recently arrived foreign-born Hispanics were working in construction, predominantly in the South and, to a slightly lesser extent, in the West.³⁰ The Center for Migration Studies and the Migration Policy Institute estimated a count of 1.7 million undocumented workers in Texas alone in 2014, 24% of whom worked in construction.³¹ Undocumented immigrants made up 15% of the total national construction workforce, outnumbering immigrant workers with valid working papers.³²

Construction continues to employ the largest share of undocumented workers of any major industry category. Studies by the Workers Defense Project have demonstrated that half of the workforce in Texas was foreign-born and that, in six southern states, nearly one-third was undocumented.³³ In certain non-licensed trades with a tradition of piecework—drywall, ceilings, wood framing, roofing, bricklaying, painting, and taping—the numbers were even higher. The lack of acceptable immigration documentation exposed these workers to a work life characterized by unsafe conditions, poverty-level payments, and wage theft. More than 40% of the surveyed group in Texas reported that they routinely experienced nonpayment of overtime and, in many cases, nonpayment of any wages.

Many of these newly arrived undocumented immigrants sought work from labor brokers, an enterprising group of shadow businesses that used smart phones with hundreds of contacts and functioned as informal hiring halls, supplying subcontractors with workers wherever and whenever they were needed. The emergence of labor brokers as a primary source of labor undermined the rationale for filing 1099 forms and lengthier legal documents required for independent contractors, especially if vulnerable workers' citizenship status was uncertain, many contractors wondered why they should bother with lengthy legal documents and 1099 forms. Managing the world of the underground economy through a system of paychecks without deductions or with straight cash was a simpler and more cost-effective method of compensation, and the always present threat of deportation was available to handle disputes. The transition from independent contracting with a legal paper trail to off-the-books unrecorded cash compensation also complicated regulatory options. Some of the more active public wage and hour enforcement agencies had been able to trace the advance of independent contracting by tracking the issuance of 1099 forms. But the deep dive into the underground economy and under-the-

²⁸ "Crackdown on illegal aliens—the impact," *U.S. News & World Report*, July 2, 1984.

²⁹ Rakesh Kochar, "The Occupational Status and Mobility of Hispanics," Pew Research Center, December 15, 2005; <https://www.pewresearch.org/hispanic/2005/12/15/the-occupational-status-and-mobility-of-hispanics/>.

³⁰ Pew Research Center, "Construction jobs expand for Latinos despite slump in housing market," March 7, 2017.

³¹ Robert Warren, "US undocumented population drops below 11 million in 2014, with continued declines in the Mexican undocumented population," *Journal on Migration and Human Security*, 4(1), pp. 1–15, 2016; <https://journals.sagepub.com/doi/10.1177/233150241600400101>.

³² Jeffrey Passell and D'Vera Cohn, "Occupations of unauthorized immigrant workforce," Pew Research Center, November 3, 2016.

³³ Amy Price et. al., "Build a Better Texas: Construction Working Conditions in the Lone Star State," Workers Defense Project, January 29, 2013. Nik Theodore et al., "Build a Better South: Construction Working Conditions in the Southern U.S.," Workers Defense Project, 2017; <https://workersdefense.org/wp-content/uploads/2023/01/Build-a-Better-South.pdf>.

table payments posed new and nearly insurmountable obstacles to measuring, let alone regulating, employer behavior when the entire system of compensation was unrecorded.

A series of studies in different states have attempted to calculate the severity of the problem and the accompanying tax revenue losses. A recent national report suggested that between 12.4% and 20.5% of the construction industry workforce (1.3 to 2.2 million workers) were either improperly classified as independent contractors or employed informally off the books. Depending on worker income assumptions, the study concluded that fraudulent employers may have realized between \$6.2 and \$17.3 billion in labor cost savings, with the resulting tax and insurance payments lost annually to state and federal coffers as well as workers' compensation insurers.³⁴

How Will We Build in the Future?

A year before the formation of the Roundtable, a December 1968 *Fortune* article described building trades unions as “the most powerful oligopoly in the American economy” and blamed the “passive stance of management” as enabling the unions’ stranglehold.³⁵ The Roundtable’s ultimate recommendations focused on the adoption of modern management techniques from aerospace and defense industries, rather than their technological advances. The corporate leaders were primarily interested in clarifying the primacy of the owner in the construction food chain. In fact, except for the expanded use of power tools, the methods used in the latter half of the 20th century would have been largely familiar to earlier generations of trades workers. Buildings could not be erected overseas and deposited on domestic sites; contractors continued to rely on a local workforce with traditional skills and methods. Construction was sheltered from outsourcing, automation, and many of the more notorious managerial innovations of the 1980s.

Corporate and political anti-union forces may have succeeded in restricting labor’s presence and influence, but they left the technology and day-to-day mechanics of the jobsite largely intact. Industry analysts continue to deride the lack of modernization. Fifty years after *Fortune*’s lament, McKinsey & Company resumed the drumbeat, blaming limited productivity improvements on “poor project management and execution . . . underinvestment in skills development, R&D, and innovation.”³⁶ Similarly, MIT Professor John Fernandez wrote: “It is widely believed that construction is the slowest of all industries of such scale in implementing proven, scientifically sound technological innovation.”³⁷ There are plenty of anecdotal tales about the embedded resistance to change in the curmudgeonly, male-dominated construction culture. When John Tocci, fresh out of engineering school, bought an expensive mainframe computer for his multi-generational family general contracting firm in 1983, his father looked at the bulky item and grumbled, “When that freaking thing can lay brick, I’ll learn how to use it.”³⁸

³⁴ Russell Ormiston, Dale Belman, and Mark Erlich, “An Empirical Methodology to Estimate the Incidence and Costs of Payroll Fraud in the Construction Industry,” ICERES, January 2020; <http://icer.es.org/wp-content/uploads/2020/06/ICERES-Methodology-for-Wage-and-Tax-Fraud.pdf>.

³⁵ Thomas O’Hanlon, “Unchecked Power of the Building Trades,” *Fortune* 78(7), December 1, 1968, p. 102.

³⁶ McKinsey Global Institute, “Reinventing construction through a productivity revolution,” February 27, 2017; <https://www.mckinsey.com/capabilities/operations/our-insights/reinventing-construction-through-a-productivity-revolution>.

³⁷ John Fernandez, *Material Architecture*, Routledge, 2006.

³⁸ Interview with the author, February 6, 2019.

Ingenious inventors have created bricklaying and drywall finishing robots. Exoskeletons (wearable machines with motorized joints) can relieve the burden of lifting heavy items. Lasers can replace levels and plumb bobs to establish accurate horizontal and vertical lines. Drones can navigate job sites and record daily progress. Autonomous earth-moving machinery can dig out and prepare foundations. Total station is a sophisticated optical instrument used to measure distances and angles. Cordless power tools have effectively eliminated the hassle of dragging long extension cords through a maze of partially assembled rooms and corridors. And YouTube videos portray the wonder of a Chinese 10-story high rise assembled in 28 hours. Some of these advances have become incorporated into the routine of the building site; others remain novelty items, available only to a minority of firms that have the resources and inclination to experiment with equipment and systems that have not necessarily been proven to be quality- or cost-effective. Every day, trades workers continue to stuff tape measures, hammers, pliers, utility knives and other tried-and-true hand tools in their tool belts and carry out their responsibilities in much the same way that their predecessors did.

At first glance, the data support the oft-cited stories of a knee-jerk resistance to innovation. A 2007 Stanford University study concluded that productivity in all U.S. industries doubled between 1964 and 2004 while dropping 10% in construction during the same period.³⁹ But there are other more fundamental reasons than irascibility behind the reluctance to embrace new technology. Robots and other forms of automation are costly and require an extended time frame before presenting a satisfactory return on investment. Given the decentralized nature of the industry and the predominance of small and medium-sized firms, few owners have the financial capacity to purchase multi-million-dollar paraphernalia that will only provide a profit after multiple years. More important, companies have traditionally been motivated to spend capital on automation and expensive new procedures to reduce escalating labor costs. Unfortunately, industry executives found a simpler way to cut labor costs through misclassification, cash compensation, and reduced wages and safety standards—all components of a successful crusade to undermine the union sector. There is less incentive to buy robots to replace high-priced labor when the labor itself is no longer pricey.

In the last decades of the twentieth century, simple signs of modernity appeared on the job in the form of fax machines, beepers and then cell phones. Communication between the field and the office and design professionals improved, allowing for speedier decision-making. In the 21st century, the digital revolution has propelled construction further, particularly the design functions, project management systems, and off-site production. Millworking and sheet metal shops introduced Computer Numerical Control (CNC) processes into their equipment, allowing computers to guide cutting and shaping of metal and wood without the intervention of a manual operator. Computer Aided Design (CAD) transformed the design world by utilizing software for architects and engineers to transition from two-dimensional hand-drawn paper blueprints to three-dimensional computer imaging. CAD evolved into Building Information Modeling (BIM), a system that has revolutionized the industry in the past 15 years. BIM introduced the critical factor of coordination into the previously siloed products from the various design disciplines—architectural, structural, mechanical, electrical, civil—and allowed the management team to essentially build a project twice: once virtually in the office and a second time with the actual personnel and materials in the field.

Jeff Gouveia, Executive Vice-President of Suffolk Construction, describes the pre-BIM work style: “Prior to modeling, coordination was done with a light table with a clear piece of plastic over it. You overlaid 2D drawing on top of 2D drawing on top of 2D drawing. You got them just right, taped them in the

³⁹ Ryan Smith, *Prefab Architecture: A Guide to Modular Design and Construction*, John Wiley & Sons, 2010, p.79

corner, made sure that they were in the right scale, and then you basically started circling conflicts, where a piece of ductwork or pipe went into a column or a beam.”⁴⁰ Modeling allows for the advance visualization of an entire development from site-work to finish hardware and the ability to easily incorporate feedback. The level of coordination can eliminate the design conflicts that had previously been a chronic source of disputes among contractors, designers, and the affected trades. On projects that adopt BIM, buildings are erected more quickly and efficiently and, presumably the dynamics among the various actors become more collaborative and less litigious. On renovations, laser scanning can serve a similar purpose by ensuring that the plans correspond precisely to existing dimensions and modeling can then identify possible problems.

While CAD and BIM initially just involved the professionals, modeling has since filtered down to some of the workers on the job. Pre-construction meetings can include all relevant subcontractors and their field leaders to offer suggestions and critiques of the unfolding designs. Foremen for sophisticated firms routinely have iPads as part of their tool kit so plans and modifications can be transmitted instantaneously. The old reliable gang boxes that housed workers’ tools for overnight protection now often have flat screens on the underside of the lid to display the latest shop drawings electronically. Most union training programs have incorporated CAD and BIM into their curricula. New young entrants into the industry from diverse demographic and socio-economic backgrounds may be able to translate their video gaming expertise into modeling proficiency in the field.

Industry critics have long promoted the vision of factory-based building as an alternative to the chaotic and backward conditions on the job site, offering the prospects of a controlled environment with permanent workstations, freedom from unpredictable weather, a smoother path to automation, and a lower paid semi-skilled workforce. Yet manufactured housing, an off shoot of mobile home production, has never captured consumer imagination. Even the federally subsidized Operation Breakthrough, a brainchild of the Nixon administration, was unable to kick-start the modular home industry. Despite the widespread acceptance of manufactured homes in Europe, complaints about quality, design limitations, and even cost have dogged the US experience. Modular (or volumetric) building comprises just 3% of the total US construction market and has largely been limited to sectors with repetitive design features, such as multi-unit apartments, hotels, or dormitories, where identical finished boxes can be stacked next to and on top of each other.⁴¹ An advantage of volumetric six-sided finished boxes is that they can be assembled in the plant at the same time that utilities and foundations are put in place at the site, thus compressing the overall schedule. Still, for all the theoretical savings of a factory setting, modular construction has yet to demonstrate that cost savings consistently outweigh the limitations.

Prefabrication represents a hybrid off-site approach. Panelized walls, roof trusses, floor systems of wood or metal can be constructed in shops and factories, trucked to the site, and lifted into place to be integrated into the emerging vertical structure. A panel shop requires fewer start-up costs than a full-scale production factory, making it more financially accessible to contractors with limited capital. There are examples of impressive achievements, such as the 18-story residential building in London that moved a “jump factory” from floor to floor with gantry cranes, completing the work in 18 weeks without an accident and a 75% reduction of on-site material waste.⁴² Still, that ambitious project was well over

⁴⁰ Interview with the author, 9/16/20

⁴¹ <https://www.modular.org/HtmlPage.aspx?name=MA-feature-pmc17-sum>

⁴² Matt Gough at the Advancing Prefabrication Conference, June 15-17, 2021

budget and required the kind of initial investment possible for only a small fraction of the global contracting community.

The terms off-site, prefabrication, and modularization are often used as interchangeable elements on a spectrum of industrialization. Amy Marks, the self-styled “Queen of Prefab”, argues that construction employers must shift their mindset from being contractors to becoming manufacturers.⁴³ In a 2020 report, McKinsey & Company futurists predict that 45% of the industry’s value chain will shift from traditional processes in the next 15 years. But even the perpetually optimistic McKinsey consultants recognize the impediments, conceding that only 10-12% of construction activities will incorporate their lengthy list of recommendations due to “different starting points and abilities to transform.”⁴⁴

Prescriptions for Progress

The federal Bipartisan Infrastructure Law (BIL) (formally the Infrastructure Investment and Jobs Act), President Biden’s Inflation Reduction Act (IRA), and the CHIPS+ innovation bill will likely prove to be a bonanza for construction workers and employers. Most of the projects funded by these bills will be covered by the federal Davis-Bacon Act (an exception being the broadband funding in the BIL). In union strongholds, the US. Department of Labor Davis-Bacon wage surveys typically reflect the union pay scale, giving union contractors a level playing field on which to bid. In areas with minimal union presence, the DOL’s posted rate is meant to reflect the prevailing wage in the area. These Davis-Bacon requirements establish a solid basis for union participation in projects, enhanced by federal guidance and financial incentives for stronger labor standards including Project Labor Agreements (PLAs). Backed by the building trades, PLAs require union conditions on the covered project or projects and hiring most trades labor from union hiring halls and referral services, but political hurdles and the potential for drawn-out legal battles impede their widespread use. While supportive of Biden’s overall infrastructure initiative, the ABC announced the creation of a six-figure war chest to challenge any use of mandated PLAs long before any of these bills passed.⁴⁵

The flow of billions of new federal dollars could provide an opportunity to begin re-defining industry conditions. To reverse the industry’s bifurcation, unions will have to take the lead, reversing passive past patterns and embracing more recent progressive strategies. The twentieth century’s earlier decades of union dominance had fostered failing policies and a sense of complacency. Union officials limited their roles to negotiating collective bargaining agreements, operating hiring halls, and servicing their members. Organizing and growth were largely off the table as many members preferred to restrict new entrants to minimize competition for scarce jobs during slowdowns. Openings were often handed down from father to-son, resulting in an exclusionary culture, largely impenetrable to racial minorities and women.

It has taken years of attacks from the business community, dwindling union density, and the shifting demographics of the workforce for union leaders and members alike to reassess and realize that the earlier brand of “country club unionism” was not only regressive and repugnant, but dysfunctional as well. Workers of color were embittered by the racist practices, immigrants were dismayed by the xenophobic intolerance and other non-union workers were resentful of the closed doors, leaving union tradesmen on a political island with little support. As union ranks have become more diverse and open

⁴³ Amy Marks, at the Advancing Prefabrication Conference, June 15-17, 2021

⁴⁴ McKinsey & Company, “The Next Normal in Construction,” June 2020

⁴⁵ *Construction Dive*, July 20, 2020

to a wider range of approaches – particularly in the basic trades – newer generations of leaders have abandoned their predecessors’ insular views. Servicing a shrinking pool of members can no longer suffice as a long-term strategy. In the words of former Painters Union General President Ken Rigmaiden, “We need to support our current members but also support those workers who want to do the same work that we do -- that means people of color and newly arrived workers to this country.”⁴⁶

Many unions have sought to implement a more aggressive mission through restructuring and abandoning the decentralized arrangements of the past. Thousands of small local unions have been merged into larger urban based or regional bodies. Despite complaints of a loss of democratic control as well as political influence in smaller cities and towns, centralizing resources has allowed for a more efficient administration of union services and greater solvency in health and retirement plans. Rigmaiden and others argue that the concentration of staff and resources allows for a more strategic pursuit of organizing goals and further suggests that those newly strengthened locals need to assign disproportionate funds and organizers to the weaker outlying areas to both rejuvenate union activity and protect the remaining strongholds.⁴⁷

A recognition of the failure of past policies has driven a renewed commitment to outreach and expansion. Organizing takes two forms in the building trades. “Top-down” organizing consists of attempts to convince owners to build upcoming projects on a union basis, often relying on the political power of members who live in affected communities. Organizers also try to convince non-union contractors to sign collective bargaining agreements based on the appeal of access to a skilled, productive workforce, an approach that is generally only effective in areas with some level of existing union strength. “Bottom up” organizing is more akin to conventional labor campaigns, i.e., engaging in a struggle to unionize an employer’s workforce. Unlike manufacturing, retail, service, or public workplaces, however, the construction landscape is impermanent. Workers regularly move from project to project and employer to employer, so a sustained campaign against an individual contractor is difficult to mount. Instead, effective multi-lingual organizers develop long-term sustainable relationships with non-union workers in each geographical jurisdiction, offering assistance to combat wage theft or safety violations, and hoping to recruit the most talented trades workers into the union fold.

Selling the “union-built” advantage to owners and contractors rests primarily on the distinct skills gap between union and non-union workers. Despite occasional claims to the contrary, there are few consistent and successful training programs in the non-union sector. The craft is learned on the job. From an employer’s perspective, the only justification for a higher compensation package is superior productivity. For that reason, unions invest heavily in training programs for apprentices and skill upgrades for journey workers to stay abreast of new technologies and techniques. The utilization of a reliable, skilled workforce that can meet schedule requirements is also one of the rationales for Project Labor Agreements. Unions steadily promote PLAs since they secure good wages and benefits on a given project but reliance on that approach can elide the broader recognition of the fundamental need to organize.

Union training programs have recognized the value of teaching to the upcoming technology and some unions have broadened their notion of organizing beyond the construction site. According to Jay Bradshaw, Executive Secretary-Treasurer of the Northern California Regional Council of Carpenters, “Modularization is here to stay and will be done by firms that exploit workers if unions don’t organize

⁴⁶ Ken Rigmaiden, Keystone Research Center (KRC) Convening on Construction, May 14, 2021.

⁴⁷ Ken Rigmaiden, KRC Construction Convening, May 13-14.

the industry.”⁴⁸ Factory OS is a partnership between a long-standing union contractor, a well-established developer, and the Northern California Carpenters. Consisting of two buildings totaling 350,000 sq. ft on a recommissioned naval base in Vallejo, the plant employs 500 unionized workers and turns out 1,500 modular housing units a year in an effort to impact the high-cost Bay Area residential market. Union leaders helped locate the site, recruit and train the workforce, and the owners readily accepted a collective bargaining agreement.

Most building trades unions have reversed their long history of exclusion. While there are varying levels of commitment by trade and by region, the union sector has become a viable route for racial minorities and women to achieve a safe and well-paid career in construction. Leah Rambo, director of the New York City Sheet Metal apprentice program, says: “We aggressively recruit non-traditional workers outside the conventional direct entry process by partnering with community organizations, pre-apprenticeship programs, and high schools. Recruiting and maintaining a diverse workforce also involves training current members about appropriate behavior on the job, directly addressing the issue of racial and/or sexual harassment with zero tolerance policies.”⁴⁹

The road to inclusion also incorporates a greater willingness to work alongside community organizations. As union influence waned, other formations have appeared to protect the needs of unrepresented workers. In particular, workers’ centers are now common in certain metropolitan areas, focused on serving and advocating for immigrant workers by providing a comfortable and supportive environment based on language, ethnicity and legal status.⁵⁰ The Los Angeles Alliance for a New Economy (LAANE) is one of a dozen or so community labor organizations that have sprung up around the country.⁵¹ One of LAANE’s early campaigns was to win Project Labor Agreements on the city’s transit jobs to secure union jobs and create a pathway for community residents to enter apprenticeship programs. Since then, the LA Building Trades and LAANE have jointly fought for affordable housing and green jobs. “We try to leverage the power that comes from community-labor alliances to win socially valuable projects with good union jobs,” says Roxana Tynan, LAANE’s Executive Director.⁵²

There are political and policy choices that must be made if the industry is to, once again, be a conduit to the middle class for workers who cannot afford or choose not to attend college. In particular, federal and state regulatory agencies must wage war on misclassification, the underground economy, and all forms of payroll fraud. As a candidate for President, Biden proposed “an aggressive, all-hands-on-deck enforcement effort that will dramatically reduce worker misclassification”⁵³ and appointed a politically astute, experienced and knowledgeable “dream team” to run the Labor Department—initially Marty Walsh (who came out of the Boston trades) as Secretary and Julie Su as Deputy Secretary (and now Acting Secretary), and Patricia Smith as Senior Counselor (although Congress blocked the confirmation of David Weil as the Wage and Hour Administrator). Their backgrounds include strategic and aggressive enforcement at both the federal and state levels, but it will take a sustained effort to slow down, let alone reverse, the long descent into the shadow economy. As long as employers violate employment laws to gain a cost advantage, a level playing field in a highly competitive industry will remain in jeopardy. If owners select contractors to build their projects based on price alone, even the most

⁴⁸ Jay Bradshaw, Keystone Convening on Construction, May 13-14, 2021.

⁴⁹ Leah Rambo, Keystone Convening on Construction, May 13-14, 2021.

⁵⁰ Janice Fine, *Workers Centers*, Cornell University Press, 2006

⁵¹ Ed. David Reynolds and Louise Simmons, *Igniting Justice and Progressive Power*, 2021

⁵² Roxana Tynan, Keystone Convening on Construction, May 13-14, 2021.

⁵³ <https://joebiden.com/empowerworkers/#>

creative and well-conceived organizing campaigns will falter in the face of the sheer economics of bidding predicated on illegal and unethical employment arrangements.

Activists in overwhelmingly non-union areas face even larger hurdles than unions with the funds to pursue an expansion strategy. The Workers' Defense Project (WDP) is a mostly Hispanic membership-based organization founded in Texas in 2005. According to Executive Director Emily Timm, the state's legislature and real estate community are anti-union and anti-immigrant yet depend on immigrant labor to build projects. One worker is killed every three days, wage theft is common, there is no state mandated workers compensation insurance program, and misclassification and cash compensation are common. The WDP inaugurated the Better Builder Program (BBP) to pressure owners to sign on to a minimum set of standards on worksites and has impacted \$2 billion worth of public and private construction, creating improved job quality and career pathways.⁵⁴

The BBP is analogous to a "responsible employer" concept that has become more prevalent in union strategic thinking. Rather than insisting on exclusive union conditions, responsible employer municipal ordinances, pension fund stipulations, and private agreements call on owners and developers to adhere to a minimum set of guidelines on their projects. Less politically charged than explicit union requirements, responsible employer provisions rest on the simple but incontrovertible notion that the people who build our society deserve decent working conditions. Depending on the available leverage, responsible employer language can run the gamut from requiring prevailing wages, health insurance, retirement security, apprentice training, and employee classification of workers to more modest demands for workers compensation insurance and minimal safety rules. A responsible employer ordinance in a Boston-area municipality may require conditions that approximate a union contract while a Houston BBP commitment may serve as a minor but significant step towards a safer and fairer jobsite. Nonetheless, the model is similar, i.e., to sustain or restore a once universally valued set of occupations to the dignity and respect they deserve by elevating the entire industry. As Timm suggests, "It's pretty basic. Workers should be safe on the job, be paid a dignified wage and benefits, have the ability to set standards, and have a voice."⁵⁵

Building Forward Better in Pennsylvania

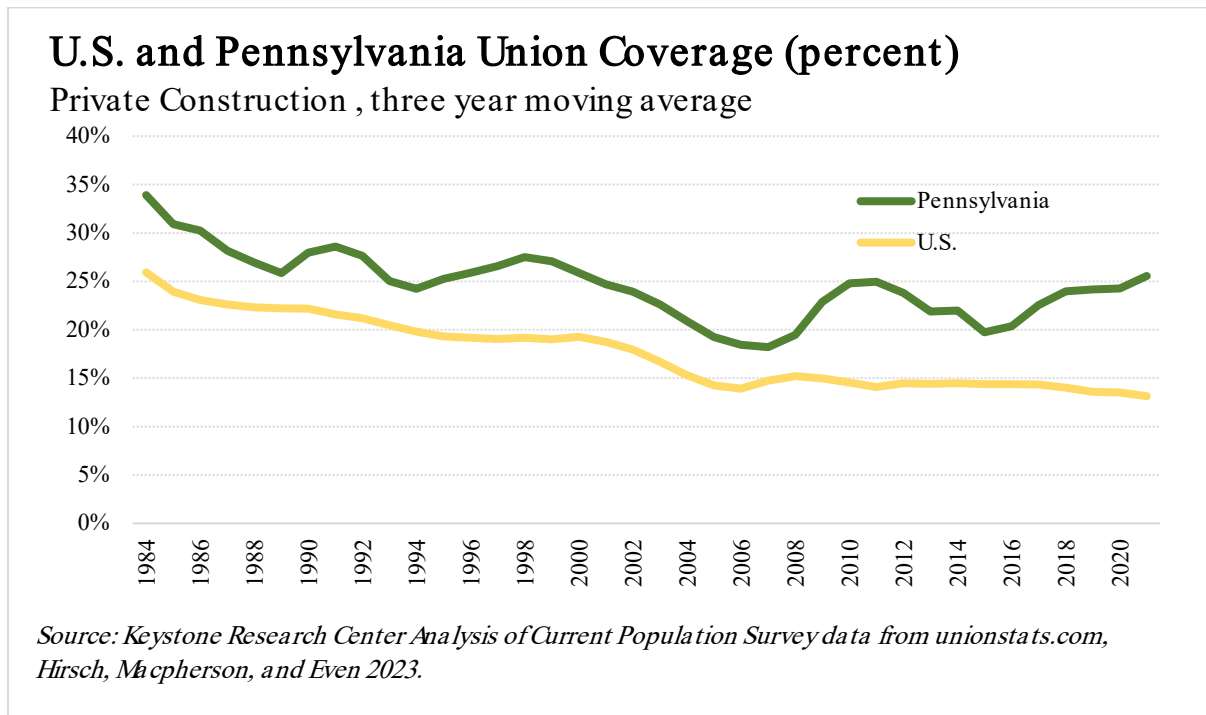
Many observers perceive Pennsylvania, especially in the construction sector, to be a "strong union" state, especially in and around Philadelphia and Pittsburgh. That characterization is, by comparison with the South and Southwest, accurate. Even so, the basic dynamics outlined in *The Way We Build* apply to Pennsylvania. These dynamics certainly include the orchestrated attack on unions (the headquarters of DuPont, one of the founders and leaders of the Business Roundtable, after all, are just a stone's throw from Pennsylvania); the growth of the non-union Associated Builders and Contractors; the industry restructuring through which construction managers expanded; and the growth of worker misclassification and a cash-economy workforce.

Figure 1 shows that union coverage in the Pennsylvania construction industry declined from about a third in the early 1980s (and 38.5% in 1983—not shown in the figure because we use a three-year average to increase sample size and the reliability of our estimates) to below a fifth in 2007, right before the Great Recession. Union coverage rebounded in recent years to about a quarter. Taking into account

⁵⁴ Emily Timm, Keystone Convening on Construction, May 13-14, 2021.

⁵⁵ Emily Timm, Keystone Convening on Construction, May 13-14, 2021.

that residential construction has virtually no unionized workers, and also that not all construction workers are in the trades, construction union density in Pennsylvania among blue-collar trades in the non-residential construction sector is likely about half.⁵⁶

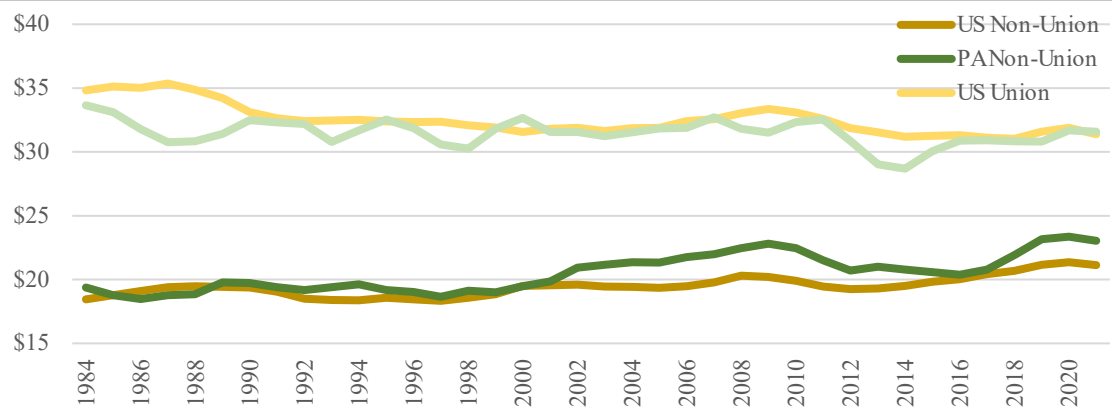


When it comes to wages, the Pennsylvania trends since 1983 represent a less sharp variation on national trends. The wages of unionized Pennsylvania blue-collar trades workers have bounced around but changed little in real terms over 40 years—compared to a nearly 10% drop nationally. Non-union wages of blue-collar trades in Pennsylvania have risen slightly but remain only 73 percent of PA union wages. The gap in benefits between the union and non-union sector means that the compensation (wages plus benefits) gap likely exceeds the wage gap.

⁵⁶ If we assume that one third of construction employment is residential construction but that union density is zero in residential construction, then 25% union density overall translates into 38% among all employees in construction. If one then assumes that trades account for two thirds of total employment in construction, union density among Pennsylvania trades in non-residential construction would be 56%. (BLS reports trades employment at about 60% of total sectoral employment but this share could be higher in non-residential construction; see <https://www.bls.gov/spotlight/2022/the-construction-industry-labor-force-2003-to-2020/home.htm>.)

Wages for Blue Collar Construction Workers

US & PA Union and Non-Union Workers, 1983-2022, 3 year moving average



Source: Keystone Research Center estimates from Current Population Survey Data, Outgoing Rotation Group extracts from the Economic Policy Institute. Includes only workers in the construction industry within trades occupations.

Also following national trends, the available evidence suggests that labor standards, including misclassification and the emergence of cash economy construction (e.g., in the Philadelphia residential housing industry), have penetrated even the most unionized regions of our state.⁵⁷ Because of low wages in parts of the Pennsylvania construction industry, an estimated 28% of families of construction workers in Pennsylvania are enrolled in one or more safety net programs at a cost to the state and the federal government of \$428 million per year. Compared to all Pennsylvania workers, construction workers are more than twice as likely to lack health insurance (7% compared to 16%).⁵⁸

Pennsylvania also follows national trends in terms of the increasing diversity of the construction workforce, including apprentices. In a Southeast and South-Central Pennsylvania region spanning the Lehigh Valley, Lancaster, York, and the Philadelphia metro area, about a fifth of the blue-collar construction trades workforce is now non-white and/or Hispanic.⁵⁹ Over the past five years, 15.5% of new apprentices in joint labor-management construction apprenticeship programs in Pennsylvania have been male minorities. Joint labor-management programs account for the lion's share of both male minority apprentices in construction in Pennsylvania (84% of which enrolled in join programs in 2018-

⁵⁷ See Stephen Herzenberg and Mark Erlich, "Worker Misclassification Has Reached Epidemic Proportions in the Pennsylvania Job Market," Pennsylvania Senate Democratic Policy Committee Hearing, November 15, 2021; <https://www.senatormuth.com/wp-content/uploads/2021/11/Herzenberg-Testimony-Misclass-Final.pdf>. See also Stephen Herzenberg and Russell Ormiston, "Illegal Practices in the Philadelphia Regional Construction Industry," Keystone Research Center, January 2019; <https://www.keystoneresearch.org/sites/default/files/KRC%20Illegal%20Labor%20Con%20Final.pdf>.

⁵⁸ Ken Jacobs, Kuochih Huang, Jenifer MacGillvary and Enrique Lopezlira, "The Public Cost of Low-Wage Jobs in the Pennsylvania Construction Industry," UC-Berkeley Labor Center, January 10, 2022; <https://laborcenter.berkeley.edu/the-public-cost-of-low-wage-jobs-in-the-pennsylvania-construction-industry/>.

⁵⁹ In the 2010-15 period, 20% of the union workforce was non-white and/or Hispanic, with 10% Black and 9% Hispanic; and 18% of the non-union workforce was non-white and/or Hispanic, including 11% Hispanic and 6% Black. Source: Keystone Research Center analysis of the Current Population Survey.

22) and, although the percentages are low, female apprentices (89% of which enrolled in joint programs).

Box 1: Apprenticeship Readiness Programs Diversify Pennsylvania’s Blue-Collar Trades

In the past decade, a growing number of “apprenticeship readiness” (or “pre-apprenticeship”) programs have been established in Pennsylvania that seek to enable more male workers of color and female workers to enter and succeed in joint labor-management construction apprenticeship programs in Pennsylvania.

For example, the Western Pennsylvania Builders Guild, a labor-management partnership, operates a pre-apprenticeship program called “Introduction to the Construction Trades.”⁶⁰ The program includes a proprietary screening system to select participants with the best chance of success, and pre-employment training for about six weeks, using a curriculum developed by the national building trades called the Multi-Craft Core Curriculum (or “MC3”). On the back end, the Builders Guild’s strong relationships with construction contractors and unions guarantees successful graduates an interview and thus a real chance to land a construction job and enter apprenticeship. In recent years, Intro to the Trades has trained 12 cohorts and 162 total participants. Fully 80% identified as African American or Black, 44% were under the age of 26, and 76% were placed in unsubsidized employment. These outcomes are consistent with similar apprenticeship readiness programs across the United States.⁶¹

An ongoing project of the Pennsylvania Building and Construction Trades Council, assisted by Keystone Research Center, is documenting “best practices” in diversifying the pipeline to union construction careers in and beyond Pennsylvania. The project launched in part because a tight labor market and federal investments in infrastructure and climate action will require many apprenticeship programs to expand their apprenticeship intake. This need also creates an opportunity to spread inclusive pipeline programs and enable qualified workers in all demographic groups to access high-paying construction careers.

Given this portrait of Pennsylvania’s past and present in the construction industry, how might our state become a leader in restoring dignity to construction work and expanding the share of industry jobs that are, once again, a pathway to the middle class? Here are seven complementary ways.

Create/Maintain a Full Picture of PA Construction and How the State Can Promote the High Road

Too often, governments interact with industries in siloed ways, one agency at a time, and without any overall strategy for influencing each sector so that it develops along a trajectory aligned with the public good. Pennsylvania should pilot a more integrated approach in the construction sector, using the substantial leverage to shape industry development that results from all the different ways government touches the construction sector—e.g., via public funding of construction, the new federal investments in climate action and infrastructure, regulatory and enforcement authority, and government subsidies for

⁶⁰ This profile is based on Nthando Thandiwe and Diana Polson, “Pivoting to a Moral Economy: New Mayor, New Opportunities,” Pittsburgh Budget and Policy Center, December 2021, pp. 51-52; <https://krc-pbpc.org/wp-content/uploads/2022-Budget-Analysis-Final.pdf>.

⁶¹ Cihan Bilginsoy, “Diversity, Equity, and Inclusion Initiatives in the Construction Trades,” The Institute for Construction Employment Research, March 2022; <https://nabtu.org/wp-content/uploads/2023/01/ICERES-Study-22Diversity-Equity-and-Inclusion-Initiatives-in-the-Construction-Trades22.pdf>.

training, apprenticeship and economic development. State government should take this approach not in a micro-managing way but in partnership with industry stakeholders who know the industry best, including unions, contractors, owners, and diverse demographic groups.

The embrace of a holistic sectoral policy in construction should start with fleshing out a more detailed, research-based picture of the Pennsylvania industry. The newly formed Construction Workforce Committee of the Pennsylvania Workforce Development Board could oversee the research to create and then maintain a full picture of the Pennsylvania construction industry, especially if an effort is made to attract highly respected trades, owners, and law-abiding contractors to participate. The research needed includes a study of the prevalence of misclassification, deploying a methodology informed by other state studies over the past two decades.⁶² Pennsylvania should also conduct a survey of cash-economy construction workers, adapting a “snowball technique” deploying by pioneering research on labor standards violations in low-wage labor markets and overrepresenting the immigrant workers too often missed by standard household and employer surveys.⁶³ Pennsylvania could, further, update a 2018 study of construction apprenticeship in Pennsylvania.⁶⁴ The state, the industry, and labor could also commission an assessment of the diffusion of new technology, including more modular construction—possibly with assistance from the Team Pennsylvania Foundation. The goal should be to identify potential tri-partite (industry, labor, and government) initiatives that could address the structural obstacles that have retarded diffusion of new technology.

Maintain and Strengthen Labor Standards, Including on Expanding Energy and Climate Projects

Pennsylvania’s prevailing wage and benefit law currently applies to state-funded construction projects with a cost of more than \$25,000.⁶⁵ Court decisions have also determined that the state prevailing wage law applies to private projects subsidized by the state, including by tax credits. The state should maintain and strengthen its prevailing wage laws including by enacting a legislative proposal to ensure that prevailing wage and benefit standards apply to renewable energy and other industries related to reducing carbon emissions such as electric vehicle infrastructure and weatherization.⁶⁶ The state should also ensure that the state prevailing wage and benefit law applies to the \$1.16 billion in funding that the state will distribute from the federal Broadband Equity, Access, and Deployment (BEAD) program. This is

⁶² Russell Ormiston, Dale Belman, and Mark Erlich, “An Empirical Methodology to Estimate the Incidence and Costs of Payroll Fraud in the Construction Industry,” ICERES, January 2020; <http://icer.es.org/wp-content/uploads/2020/06/ICERES-Methodology-for-Wage-and-Tax-Fraud.pdf>.

⁶³ For details on this methodology, see Annette Bernhardt et al., “Broken Laws, Unprotected Workers: Violations of Employment and Labor Laws in America’s Cities,” National Employment Law Project, 2009; <https://www.nelp.org/wp-content/uploads/2015/03/BrokenLawsReport2009.pdf>. See especially “Appendix A: Data and Methods.”

⁶⁴ Stephen Herzenberg, Diana Polson, and Mark Price, “Construction Apprenticeship in Pennsylvania,” Capital-Area Labor-Management Council, Inc., 2018; https://krc-pbpc.org/wp-content/uploads/20180530_CALMReport_Final.pdf.

⁶⁵ For more on the importance of prevailing wage laws and Project Labor Agreements in Pennsylvania, see Stephen Herzenberg, Frank Manzo IV, Lonnie Golden, and Andrew Wilson, “Hiring Local on Transportation Infrastructure Projects in Pennsylvania: Employment, Economic, Fiscal, and Training Impacts,” Keystone Research Center and Illinois Economic Policy Institute, February 16, 2023, especially pp. 20-21; <https://krc-pbpc.org/wp-content/uploads/KRC-PSA-ILEPI-Pennsylvania-Local-Hire-FINAL.pdf>.

⁶⁶ The legislative proposal is Pennsylvania House Bill 949, sponsored by Representative Elizabeth Fiedler, which has 25 co-sponsors; <https://www.legis.state.pa.us/CFDOCS/billInfo/billInfo.cfm?year=2023&sInd=0&body=H&type=B&bn=949>.

the one part of the federal Bipartisan Infrastructure Law (BIL) to which federal Davis-Bacon prevailing wage laws do not apply.

On large projects subsidized by state or federal subsidies including tax credits, Pennsylvania should also encourage the use of Project Labor Agreements (PLAs). Along these lines, the final guidance from the Department of the Interior governing the distribution of the first \$725 million in Abandoned Mine Land (AML) reclamation funds from the BIL, specifies that “... for projects or aggregated projects in excess of \$1 million, States or Tribes should require that contractors...provide: 1) a certification that the project uses a unionized project workforce; 2) a certification that the project includes a project labor agreement; or 3) a project workforce continuity plan, detailing...” how the project will achieve the benefits of a unionized workforce or PLA, such as access to adequate supplies of experienced and well-trained labor.⁶⁷ The guidance mention of “aggregated projects” is a critical nuance. Historically, AML reclamation projects in Pennsylvania and other states have been small, with one consequence being that more reputable contractors, including unionized ones, have not typically bid on them. Now that federal grant funds and tax credits in a variety of renewable energy and related industries have expanded, aggregating projects is a vital tool that can help ensure more of the resulting work is performed by well trained workers with fair compensation that reflects their experience and skills.

Ensuring that strong labor standards extend to renewable energy and climate-related projects is vital not only to ensure the quality and safety of the work performed on those projects. It is also vital to increase worker and union support for climate action. In the absence of PLAs or other measures to ensure strong labor standards, utility scale solar and wind construction ordinarily pay far below the wage and benefit levels of the traditional energy and utility industries.

Enact Local and a State Responsible Contractor Law

Responsible contractor ordinances (RCOs) are being utilized by more and more communities across the nation, from California to Florida and Illinois to Alabama.⁶⁸ Bucks, Lehigh, and Northampton Counties, and now Centre County, all have RCOs in Pennsylvania.⁶⁹ RCOs establish objective criteria and verifiable standards for contractors bidding on public construction projects. These provisions typically require proof of participation in apprenticeship training programs and certificates of insurance, prequalification

⁶⁷ For the announcement of the final guidance, see US Department of the Interior, “Biden-Harris Administration Releases Final Guidance on Bipartisan Infrastructure Law Abandoned Mine Land Grant Program,” July 21, 2022; <https://www.doi.gov/pressreleases/biden-harris-administration-releases-final-guidance-bipartisan-infrastructure-law>. For the guidance itself, see Office of Surface Mining Reclamation and Enforcement, “Guidance on the Bipartisan Infrastructure Law Abandoned Mine Land Grant Implementation,” https://www.osmre.gov/sites/default/files/inline-files/BIL_AML_Guidance_7-19-22.pdf.

⁶⁸ Karla Walter, “Proven State and Local Strategies to Create Good Jobs with IIJA Infrastructure Funds. Center for American Progress, 2022; <https://www.americanprogress.org/article/proven-state-and-local-strategies-to-create-good-jobs-with-iija-infrastructure-funds/>.

⁶⁹ The Centre County RCO passed 6-27-23: see <https://centrecountypa.gov/DocumentCenter/View/25256/Ordinance-1-of-2023-Responsible-Contractor-Ordinance>. Northampton County enacted an RCO October 5, 2018: <https://www.northamptoncounty.org/COUNCIL/Documents/Ordinance%20Adoption/2018/Ord648-2018%20-%20Repeal%20639-2018%20Procedures%20for%20Solicitation%20and%20Award%20of%20Contracts.pdf>. Lehigh County enacted an RCO on April 7, 2020: [https://go.boarddocs.com/pa/lehc/Board.nsf/files/BQ3QP36802B6/\\$file/2020-106-ORD.pdf](https://go.boarddocs.com/pa/lehc/Board.nsf/files/BQ3QP36802B6/$file/2020-106-ORD.pdf). Bucks enacted an RCO May 4, 2020: <https://www.buckscounty.gov/DocumentCenter/View/1710/Ordinance-No-162-PDF#:~:text=The%20County%20recognizes%20there%20is,in%20a%20timely%2C%20reliable%20>.

surveys, and compliance with all local, state, and federal laws. As a result, RCOs often serve as a sort of “insurance policy” for project owners, ensuring that projects are built by professional, competent contractors with proven track records. Case studies from across the country have found that RCOs promote higher quality and more reliable services and reduced back-end costs (because of poor work the first time).⁷⁰ RCOs have also been found to encourage 8% more bids, particularly from local contractors who contribute to apprenticeship training programs.⁷¹ RCOs are “effective way[s] to improve employment conditions and living standards of construction workers without significantly raising costs for taxpayers.”⁷²

At the state level in Pennsylvania, a responsible contractor law (House Bill 1449) was referred to the House Labor and Industry Committee on June 20, 2023, and has a total of 27 sponsors and co-sponsors.⁷³ Enacting this bill would represent a significant improvement in labor standards on public and publicly subsidized projects in Pennsylvania.

Promote a Coordinated State-Local-Stakeholder Effort to Improve Labor Standards Enforcement

As noted above, worker misclassification and other violations of labor standards (such as prevailing wage benefit fraud) are endemic in the modern construction industry, including in Pennsylvania.⁷⁴ Governor Shapiro as Attorney General recognized this problem and created a new “Fair Labor Section” within the Office of Attorney General which was headed by the current Pennsylvania Secretary of Labor and Industry, Nancy Walker.⁷⁵ Now Governor Shapiro and Secretary Walker have a chance to break additional new ground by improving enforcement by the Commonwealth. To seize this opportunity, the Governor should charge Secretary Walker with developing “action plans” for improving labor standards enforcement, including in the construction industry. A construction-specific enforcement action plan should include consideration of whether and how increased cooperation with USDOL and the Biden Administration; with other state and local government entities in Pennsylvania (e.g., the Office of Attorney General, the City of Philadelphia, the City of Pittsburgh, and Allegheny County); and with private stakeholders (labor unions, other worker groups, the PA Foundation for Fair Contracting, contractor associations, and private attorneys) could improve enforcement.

⁷⁰ Paul Sonn and Tsedeye Gebreselassie, “The Road to Responsible Contracting: Lessons from States and Cities for Ensuring That Federal Contracting Delivers Good Jobs and Quality Services,” 2010; *Berkeley Journal of Employment and Labor Law*, 31(2), pp. 459–487;

<https://www.jstor.org/stable/43551794?refreqid=excelsior%3A9002edec6fa411956fdbfcd4631f8c44andseq=1>.

⁷¹ Frank Manzo IV, “The Impact of Responsible Bidder Ordinances on Bid Competition and Public Construction Costs: Evidence from Illinois and Indiana, 2018-2019,” Illinois Economic Policy Institute, 2020; <https://illinoiseipi.files.wordpress.com/2020/10/ilepi-impact-of-rbos-on-bid-competition-costs-final.pdf>.

⁷² C. Jeffrey Waddoups and David May, “Do Responsible Contractor Policies Increase Construction Bid Costs?” *Industrial Relations*, 53(2), 2014, pp. 273-294; <http://www.faircontracting.org/wp-content/uploads/2014/08/WaddoupsMayResponsibleContractorPolicies2014.pdf>.

⁷³ Pennsylvania House Bill 1449 can be found at <https://www.legis.state.pa.us/cfdocs/billinfo/billinfo.cfm?syear=2023&sInd=0&body=H&type=B&bn=1449>.

⁷⁴ See also Herzenberg et al., “Hiring Local on Transportation Infrastructure Projects in Pennsylvania,” KRC and Illinois EPI, p. 22.

⁷⁵ <https://www.attorneygeneral.gov/labor/>.

Give Priority to Responsible Contractors in Distributing Commonwealth Workforce Transformation Program Funds

On July 31, 2023, Governor Shapiro unveiled Executive Order 2023-17, the Commonwealth Workforce Transformation Program (CWTP).⁷⁶ Over a projected period of five years, the CWTP will distribute up to \$400 million in funding from the federal Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA) to pay for up to \$40,000 per each new employee hired on federally subsidized infrastructure and climate projects. For apprentices, employed pre-apprentices, and other new employees, these funds may reimburse the payment of wages, on-the-job training in the first six months, other training costs, and supportive services and direct cash assistance to overcome barriers to employment. As part of overall construction industry policy, it is critical that the Commonwealth distribute these funds to responsible contractors and make sure none of these funds go to low-road contractors that pay poorly, invest little or none of their own funds in training, and routinely violate the law. Since at least four Pennsylvania localities have already enacted Responsible Contractor Ordinances, the Commonwealth can draw on those laws in developing standards for responsible contractors eligible to receive CWTP funds.

Make PA a Leader in Diversifying the Pipeline to Union Construction Careers Including to Maximize Drawdown of Federal Climate and Infrastructure Funds

As discussed above, Pennsylvania's construction industry workforce has gradually become somewhat more diverse in recent decades. The state is well positioned today to systematically spread best practices for diversifying the pipeline to high paid union construction careers. The Commonwealth should partner with industry to make local hiring and community benefit plans—i.e., good union jobs and careers for diverse local workers—a standard component of all federally and public funded projects in the state. This will deliver multiple benefits to the industry, its workers, and the state: it will provide the workforce that contractors need, ensure high quality and safety on construction projects, and increase the share of federal climate and infrastructure funds that come to Pennsylvania.

Explore Industry-Government Cooperation to Accelerate Construction Industry Innovation

As noted, construction has been relatively slow to adopt new methods and embrace productivity-enhancing technological change including modularization. Across the country, there have been isolated efforts to foster industry initiatives aimed at accelerating innovation and increasing productivity. Given the strength of Pennsylvania's engineering universities, as well as of the Pennsylvania construction industry's self-funded joint labor-management initiatives (including but not only to pay for apprenticeship), the state should explore the potential to initiate, and jointly fund, an innovation and technology partnership in construction. The Team Pennsylvania foundation is one option for housing an initial assessment of technological change in Pennsylvania construction that is charged with developing options for public-private collaboration to accelerate industry innovation. Such an assessment should distinguish genuine opportunities to increase productivity and lower costs from off-site and factory options that represent new ways to evade paying decent compensation to workers.

⁷⁶ Governor of Pennsylvania, "Executive Order 2023-17 – Commonwealth Workforce Transformation Program (CWTP)," July 31, 2023; <https://www.oa.pa.gov/Policies/eo/Documents/2023-17.pdf>.

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In any industry, there is no such thing as a “free market,” only a market structured based on the power and influence of diverse actors to shape competition. For the past half century, the construction industry in the United States and Pennsylvania have been shaped self-consciously to intensify competing by exploiting workers and violating the law. Institutional economists a century ago used to call this “destructive competition.” Pennsylvania has a chance, looking forward, to do something better—to promote “constructive competition” based on combining skilled, fairly compensated, and experienced construction workers with new technology and tools. It’s past time to get started.