CPWR
THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING

Data Bulletin

WWW.CPWR.COM
NOVEMBER 2021

Construction Safety Management During the COVID-19 Pandemic

Amber Brooke Trueblood, DrPH, Samantha Brown, MPH, William Harris, MS, Xiuwen Sue Dong, DrPH[1]

OVERVIEW

The COVID-19 pandemic has confronted construction businesses with safety and health management challenges, forcing them to address potential viral transmission in the workplace on top of existing occupational hazards. This Data Bulletin provides updated data about the impact of COVID-19 on construction businesses and important information regarding construction safety and health management during the pandemic. The effects of COVID-19 on construction businesses, vaccination and testing requirements for physical work presence, and expected travel expenditures through October 2021 were examined using data from the U.S. Census Bureau's weekly Small Business Pulse Survey (SBPS). Trends were compared between construction and all nonfarm industries, and within construction by establishment size. Safety and health priorities; COVID-19 plans, practices and policies; and online training were explored using data from the Construction Safety Management Survey (CSMS), a biennial online survey of construction contractors conducted by Dodge Data & Analytics (DD&A). CPWR has collaborated with DD&A on this survey since 2012, and the 2021 CSMS, conducted from May to June 2021, is the fifth in a series on safety management in construction through this joint effort. The current CSMS added questions on how contractors are managing health and wellness in workplaces during the pandemic. Trends were compared between construction firm types and by union status or firm size.* Time periods covered by this Data Bulletin vary by source according to data availability.

[1]Correspondence to: Xiuwen Sue Dong, SDong@cpwr.com.
*Sample size may be small (n < 10) for certain subgroups after stratification. Readers are advised to use related results with caution.
Numbers in text and charts (except charts 1 and 4) were calculated by the CPWR Data Center.

THIS ISSUE

This issue examines construction safety management during the COVID-19 pandemic, including the impact of COVID-19 on businesses; safety and health priorities; and plans, practices, and policies to prevent viral spread.

KEY FINDINGS

Nearly two-thirds (64%) of construction businesses reported a moderate to large negative effect of COVID-19, and 28% reported a moderate to large decrease in employment compared to pre-pandemic levels.

Chart 2

Construction businesses were less likely than all nonfarm businesses to require vaccination for on-site work from August to October 2021 (6% versus 11%).

Chart 3

COVID-19 was more likely to be the top safety and health concern in union than non-union firms (general contractors: 28% versus 13%; specialty trade contractors: 17% versus 15%).

Chart 7

Small firms were less likely to increase online training due to COVID-19 (19% of general contractors and 10% of specialty trade contractors) or have a COVID-19 written plan (68% of general contractors and 49% of specialty trade contractors).

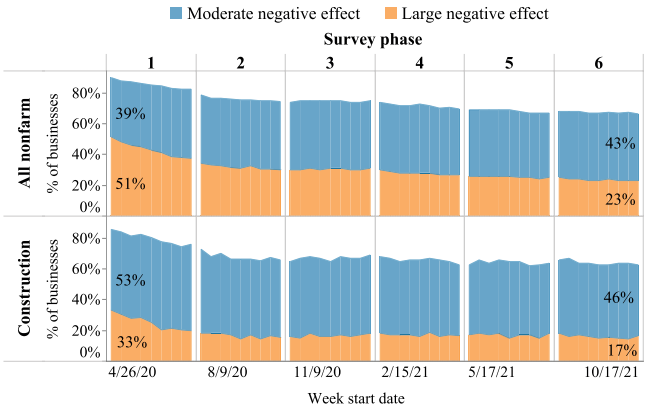
Charts 10-11

NEXT DATA BULLETIN

Mental Health among Construction Workers During the COVID-19 Pandemic

The effects of COVID-19 on construction businesses, vaccination and testing requirements for physical work presence, and expected travel expenditures were examined first. The pandemic had an immediate significant impact on small businesses, with 86% of construction businesses and 90% of all nonfarm businesses reporting a *moderate to large negative effect* of COVID-19 in April 2020 (chart 1). The negative effect of COVID-19 on businesses declined through the rest of the study period, including in fall 2021 when COVID-19 cases once again increased nationally. By mid-October 2021, 63% of small construction businesses and 66% of small nonfarm businesses reported a moderate to large negative effect from COVID-19.

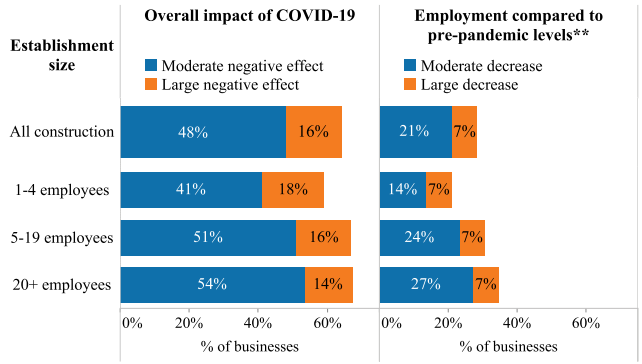
1. Impact of COVID-19 on small businesses, April 2020 - October 2021



Source: *U.S. Census Bureau, Small Business Pulse Survey.*

Compared to businesses with 20+ employees, those with fewer than five employees were more likely to report a large negative effect of COVID-19 (18% versus 14%). However, they were less likely to report a moderate negative effect of COVID-19 (41% versus 54%) and employment decline (14% versus 27%) from August to October 2021 (chart 2).

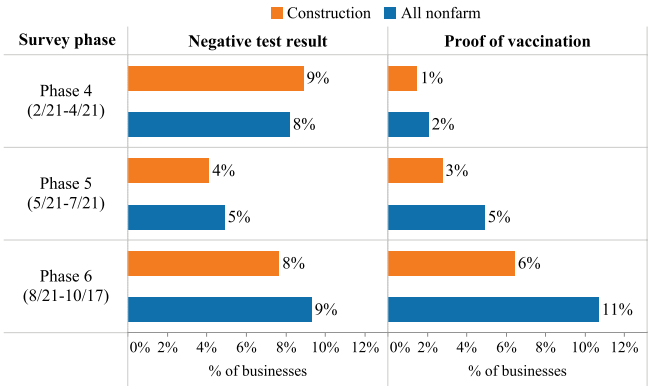
2. Construction businesses negatively impacted by COVID-19, by establishment size, August - October 2021*



Source: *U.S. Census Bureau, Small Business Pulse Survey.*
**Weekly averages shown.*
***Defined as normal employment levels prior to March 13, 2020.*

From August to October 2021, 8% of construction businesses and 9% of all nonfarm businesses required a negative test result for COVID-19 when workers physically came to work (chart 3). Construction businesses were less likely than all nonfarm businesses to require proof of COVID-19 vaccination before working on site (6% versus 11%).

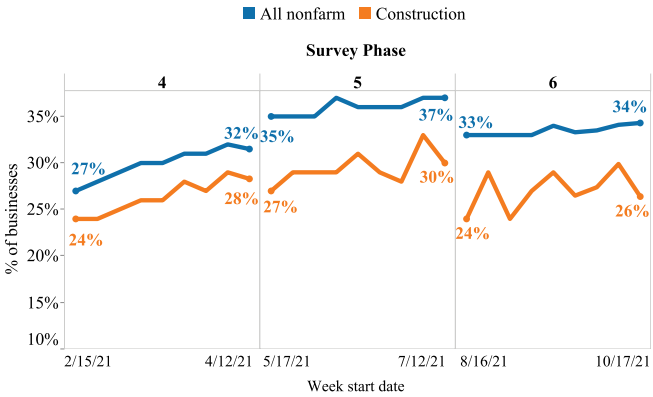
3. Businesses with COVID-19 precautions for physically coming to work, February - October 2021*



Source: *U.S. Census Bureau, Small Business Pulse Survey.*
**Weekly averages shown.*

From February to April 2021, there was a steady increase in businesses expecting travel expenditures, both in construction (24% to 28%) and all nonfarm (27% to 32%; chart 4). This trend continued until July 2021 for all nonfarm businesses. However, businesses expecting travel expenditures decreased from August to October 2021 (around the same time COVID-19 cases spiked nationally) compared to July 2021.

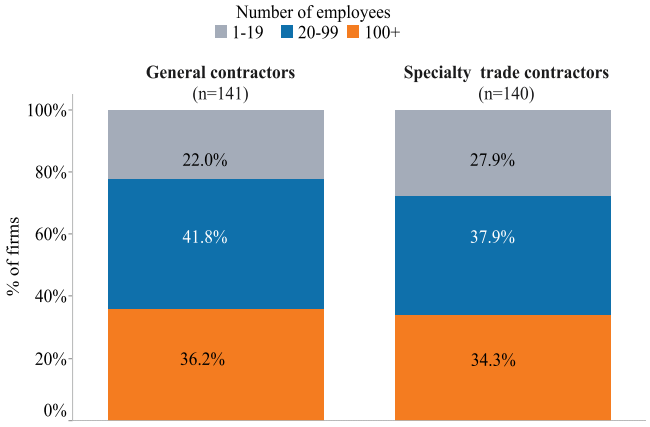
4. Businesses expecting travel expenditures in next six months, February - October 2021



Source: *U.S. Census Bureau, Small Business Pulse Survey.*

The impact of COVID-19 on safety management, including safety/health priorities, practices and policies, was further explored using the 2021 CSMS. A total of 282 construction firms completed the 2021 CSMS; of these, 50% were *general contractors* and 50% were specialty trade contractors. Specialty trade contractors had a slightly higher percentage of small firms (1-19 employees; 27.9%) compared to general contractors (22.0%). Overall, small firms were underrepresented in the sample; the Construction Payroll Establishments and Employees Dashboard shows 90.8% of construction establishments were small in 2019. Firms with 20-99 employees accounted for 41.8% of general contractors and 37.9% of specialty trade contractors.

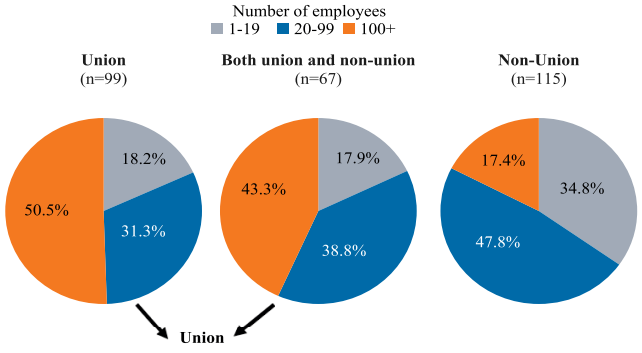
5. Percent of construction firms by firm type and size*



Source: *Dodge Data & Analytics Construction Safety Management Survey 2021.*
**Excludes one case with missing establishment size.*

Union firms generally had more employees compared to non-union firms (chart 6). Approximately half of firms that were union-only (50.5%) and both union/non-union (43.3%) were large, with 100 or more employees, whereas almost half of non-union (47.8%) firms had 20 to 99 employees. (From this point forward, firms with union workers alone and both union and non-union workers are referred to as "union firms", and firms with only non-union workers are referred to as "non-union firms.")

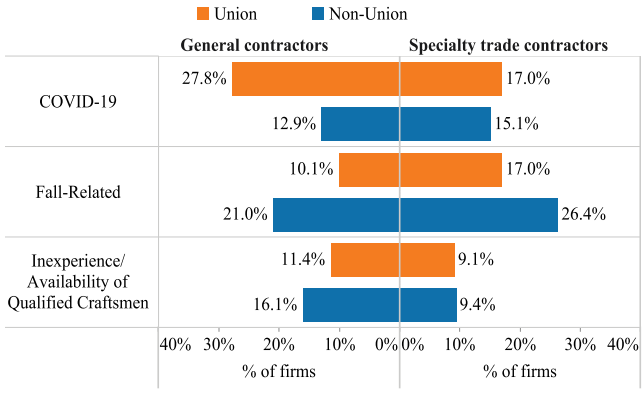
6. Percent of construction firms by union status and size*



Source: *Dodge Data & Analytics Construction Safety Management Survey 2021.*
**Excludes one case with missing establishment size.*

The occupational safety or health concerns reported most often were COVID-19, falls, and inexperience or availability of trained employees (chart 7). Over a quarter (27.8%) of union general contractors and 17% of union specialty trade contractors reported COVID-19 as their top concern. In comparison, non-union firms reported falls as their top concern (general contractors: 21.0%; specialty trade contractor 26.4%).

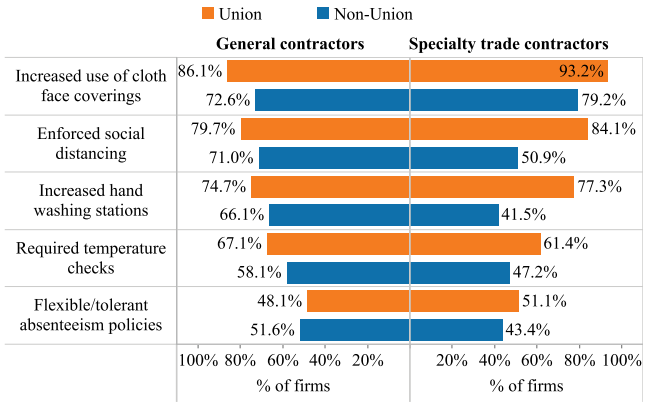
7. Percent of construction firms with top reported occupational safety or health concerns* by firm type and union status**



Source: *Dodge Data & Analytics Construction Safety Management Survey 2021.*
**Firms could report more than one concern.*
***N<10 when stratified by both firm type and union status.*

Union firms were more likely to institute health policies and practices due to COVID-19 compared to non-union firms (chart 8). Among union firms, 86.1% of general contractors and 93.2% of specialty trade contractors used cloth face coverings. For non-union firms, 72.6% of general contractors and 79.2% of specialty trade contractors reported instituting this policy. Similar trends were identified for all policies except for non-union general contractors (51.6%), who had a slightly higher percentage of flexible/tolerant absenteeism policies compared to union general contractors (48.1%).

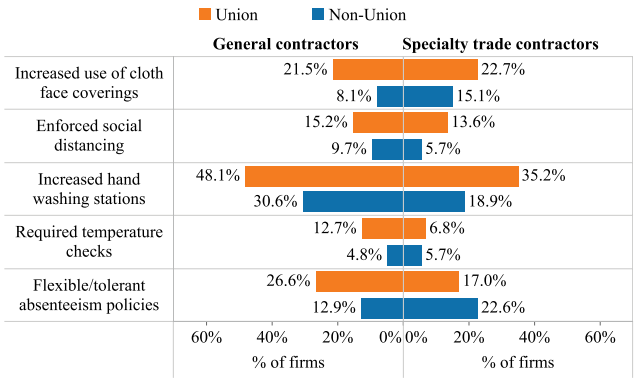
8. Percent of construction firms with COVID-19 health policies and practices by firm type and union status



Source: *Dodge Data & Analytics Construction Safety Management Survey 2021.*

Some health policies and management practices established due to COVID-19 were expected to remain after the pandemic, in particular among union firms. Hand washing stations were the most likely to be continued: almost half (48.1%) of union general contractors and more than a third (35.2%) of union specialty trade contractors reported planning to continue. In comparison, 30.6% of non-union general contractors and 18.9% of non-union specialty trade contractors reported they expected to continue. Union firms had higher percentages for all measures across firm types except for absenteeism policies.

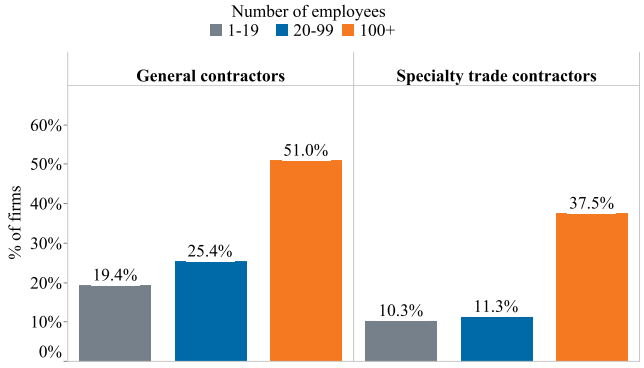
9. Percent of construction firms with post-COVID-19 health policies and management practices by firm type and union status*



Source: *Dodge Data & Analytics Construction Safety Management Survey 2021.*
**N<10 when stratified by both firm type and union status.*

COVID-19 increased firms' online training to reduce face-to-face interactions. Small firms were the least likely to report increasing online training due to the pandemic (general contractors: 19.4% and specialty trade contractors: 10.3%; chart 10). In comparison, 51.0% of large general contractors and 37.5% of large specialty trade contractors reported increased training due to COVID-19.

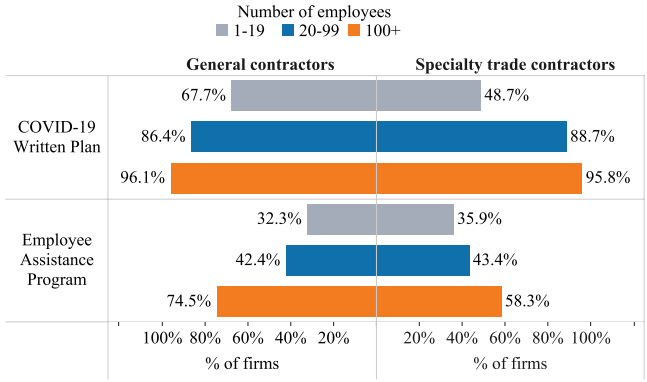
10. Percent of construction firms with increase in online training due to COVID-19 by size* and firm type**



Source: *Dodge Data & Analytics Construction Safety Management Survey 2021.*
**Excludes one case with unknown establishment size.*
***N<10 when stratified by both size and firm type.*

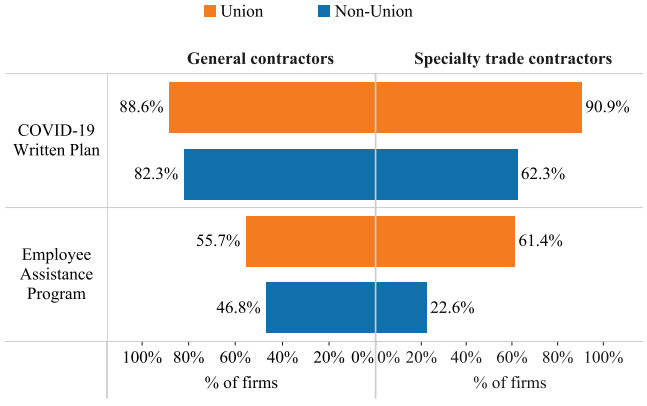
Small firms and non-union firms had the lowest percentages of written COVID-19 plans or *Employee Assistance Programs* (EAPs; chart 11 and chart 12). Of small firms, 67.7% of general contractors and 48.7% of specialty trade contractors reported having a written COVID-19 plan. In comparison, for large firms, 96.1% of general contractors and 95.8% of specialty trade contractors reported having a written plan. Similar trends were identified based upon union status. Non-union firms had lower percentages of written plans compared to union firms (general contractors: 82.3% non-union versus 88.6% union; specialty trade contractors: 62.3% non-union versus 90.9% union). Percentages of EAPs followed a similar pattern (general contractors: 46.8% non-union versus 55.7% union; specialty trade contractors: 22.6% non-union versus 61.4% union).

11. Percent of construction firms with written COVID-19 plan or Employee Assistance Plan by firm type and size*



Source: *Dodge Data & Analytics Construction Safety Management Survey 2021.*
**Excludes one case with unknown establishment size.*

12. Percent of construction firms with written COVID-19 plan or Employee Assistance Plan by firm type and union status



Source: *Dodge Data & Analytics Construction Safety Management Survey 2021.*

The impact of COVID-19 on the construction industry has been substantial, as has been documented in previous data bulletins. Although many conditions have returned to pre-pandemic levels, the impact of COVID-19 remains significant with 64% of construction businesses reporting a moderate to large negative effect of COVID-19 by October 2021.

The COVID-19 pandemic also has confronted construction businesses with safety and health management challenges. Responding to COVID-19, construction businesses have instituted a variety of health policies and practices, including requiring negative test results, proof of vaccination, face coverings, social distancing, hand washing stations, temperature checks, and flexible/tolerant absenteeism policies.

Protecting workers from COVID-19 has become a priority for the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), and CPWR, who have all developed safety resources and guidance for mitigating it. OSHA has provided updated guidance on reducing and preventing the spread of COVID-19 in the workplace. NIOSH has provided resources for COVID-19 information for the workplace. To help construction contractors and workers, CPWR has developed a COVID-19 Construction Clearinghouse, and several resources on the science and benefits of the COVID-19 vaccine.

ACCESS THE CHARTS & MORE

View the charts (including supplement charts) in PowerPoint and the data underlying the charts in Excel. Downloading will start when you click on each link. In addition, see our latest Interactive Data Dashboards on Characteristics of Construction Businesses and Characteristics of Construction Business Owners.

DEFINITIONS

General contractors *– Defined by DD&A to include general contractors, construction management companies, design-build firms, and engineering contractors.*

Employee Assistance Program *– Defined by DD&A as a program to help workers with personal or work-related problems.*

Moderate to large negative effect *– Responses of "moderate negative effect" or "large negative effect" from small businesses to the question: "Overall, how has this business been affected by the Coronavirus pandemic?"*

DATA SOURCES

Dodge Data & Analytics, 2021 Construction Safety Management Survey (CSMS).

U.S. Census Bureau, Small Business Pulse Survey (SBPS), April 2020 to October 2021. https://www.census.gov/data/experimental-data-products/small-business-pulse-survey.html

REFERENCES

Centers for Disease Control and Prevention. [2021]. COVID Data Tracker Weekly Review. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html

CPWR – The Center for Construction Research and Training. [2021]. Construction Payroll Establishments and Employees Dashboard. https://www.cpwr.com/research/data-center/data-dashboards/construction-payroll-establishments-and-employees-dashboard/

CPWR – The Center for Construction Research and Training. [2021]. COVID-19 Construction Clearinghouse. https://covid.elcosh.org/index.php

CPWR – The Center for Construction Research and Training. [2021]. COVID-19 Vaccine Resources for Construction. https://www.cpwr.com/covid-19-resources/covid-19-vaccineresources/

CPWR – The Center for Construction Research and Training. Data Reports. https://www.cpwr.com/research/data-center/data-reports/

Dodge Data & Analytics. [2021]. Safety Management in the Construction Industry 2021. https://www.cpwr.com/wp-content/uploads/Dodge_SmartMarket_Report_2021.pdf

National Institute for Occupational Safety and Health [2021]. COVID-19 Information for the Workplace. https://www.cdc.gov/niosh/emres/2019_ncov_default.html?CDC_AA_refVal=https://www.cdc.gov/niosh/emres/2019_ncov.html%20

Occupational Safety and Health Administration. [2021]. Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace. https://www.osha.gov/coronavirus/safework

ABOUT THE CPWR DATA CENTER

The CPWR Data Center is part of CPWR–The Center for Construction Research and Training. CPWR is a 501(c)(3) nonprofit research and training institution created by NABTU, and serves as its research arm. CPWR has focused on construction safety and health research since 1990. The Data Bulletin, a series of publications analyzing construction-related data, is part of our ongoing surveillance project funded by the National Institute for Occupational Safety and Health (NIOSH).

Besides cpwr.com, visit CPWR's other online resources to help reduce construction safety and health hazards:

- Choose Hand Safety
  https://choosehandsafety.org/
- Construction Safety and Health Network
  https://safeconstructionnetwork.org/
- Construction Solutions
  https://www.cpwrconstructionsolutions.org/
- Construction Solutions ROI Calculator
  https://www.safecalc.org/
- COVID-19 Construction Clearinghouse
  https://covid.elcosh.org/index.php
- COVID-19 Exposure Control Planning Tool
  https://www.covidcpwr.org
- Electronic Library of Construction Occupational Safety and Health
  https://www.elcosh.org/index.php
- Exposure Control Database
  https://ecd.cpwrconstructionsolutions.org/
- Safety Climate Assessment Tool (S-CAT)
  https://cpwr.com/safetyclimate
- Safety Climate Assessment Tool for Small Contractors (S-CAT^{SC})
  https://www.cpwr.com/scat-sc
- Stop Construction Falls
  https://stopconstructionfalls.com/
- Work Safely with Silica
  https://www.silica-safe.org/

CPWR is the research and training arm of NABTU. Production of this document was supported by cooperative agreement OH 009762 from the National Institute for Occupational Safety and Health (NIOSH). The contents are solely the responsibility of the authors and do not necessarily represent the official views of NIOSH.

CPWR
THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING
8484 Georgia Avenue
Suite 1000
Silver Spring, MD 20910
www.cpwr.com