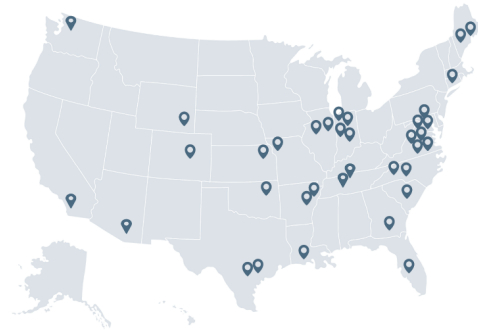


Work-Time Utilization and Staffing Level Impacts in Construction Crews

Report 1 in Volume 1 of the *Multiskilling in the U.S. Construction Industry* research series

1 THE NATIONWIDE DATASET

Trained researchers used structured work sampling to document multiskilling during normal operations on active U.S. construction projects.



40
site visits across **24** states

30
participating contractors

11,407
work-sampling observations (2,757 labor-hours)

36
projects observed

60
multiskilled crews

22
unique project types

644
workers observed

2 THE EXTENT OF MULTISKILLING OBSERVED

Workers were observed performing tasks beyond their primary trade as a regular part of normal operations:

36%
average cross-tasking share
of observed crew work time (crew range 2% to 96%)

128
unique trade combinations
e.g., ironworkers assisting with concrete formwork

2.7
skill classifications
per worker on average, with up to 6 in a single day

26
unique primary trades
represented among the 644 observed workers

3 BENEFITS OF MULTISKILLING

Compared with the same-sequence single-skilled comparison, the observed multiskilled crews achieved:

+39%
higher direct-work share

-68%
lower idle-time share

31-42%
equivalent staffing reduction

All effects statistically significant beyond the 99% confidence level ($p < 0.001$)

4 PRACTICAL TAKE-AWAYS

Target multi-trade scopes

Benefits were largest where work had multi-trade interdependent tasks and frequent handoffs

Use where qualified

Cross-tasking depends on training, competence, safety qualification, and supervision

Deploy selectively

A context-dependent strategy, not a replacement for trade specialization

Enable flexibility

Owners can review their contracts & work rules to allow for qualified cross-tasking

Interpret at crew level

All results are at the crew-level and do not represent project-wide impacts