



## PROJECT PROFILE INDEX & SUMMARY

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**Infrastructure & Public Access** – Replace decomposed granite walk/bike path in high traffic area with integrally colored, exposed aggregate concrete, glass fiber reinforcing bars for long-term resiliency

### **Battleship Row Fleet Moorings, Pearl Harbor, Hawaii**

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**Structural Repair** - Ongoing work to stabilize/repair/interpret the structures; Historic Structure Report research & writing; above/below water condition assessment; 3D digital modeling

### **Penitentiary Roof Access, Alcatraz Island, California**

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**Building Structural Repair** - Stair, landing, & structural beam repair for safe roof access; overhead concrete form & pump on sloped surface; enclosed workspace; night work to minimize visitor disruption

### **Red Barn, Miwok Riding Stables, Golden Gate NRA, California**

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**Building Structural Repair, Seismic Stabilization** - Wood structure lifted, straightened, & placed back down on new foundation; seismic stabilization; historic material preserved; new roof over historic framing

### **Wheeler Middle School, Wheeler Army Air Field, Wahiawa, Hawaii**

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**Site Construction** - Site lay-out & drainage design; site preparation; new concrete slab & slab/footings for bike rack/bench; military heavy equipment operator management

### **Windy Gulch, Alcatraz Island, California**

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**Site Feature Structural Repair/Reconstruction** - Reopened to public after years of closure; new 300 lb. precast concrete railing panels, cast-in place handrail & posts with footings into historic stair; cliff-side work area/remote location; no disturbance to nesting birds

### **Hawaii Theater Center, Honolulu, Hawaii**

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**Building Structural & Aesthetic Repair** - Ongoing project in connection with community organization, exterior & interior structural, finish, and plumbing repair

### **Power House, Alcatraz Island, California**

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**Building Structural Repair** - Interior/exterior façade & interior beam/column repair; historic metal windows/doors integral to façade preserved; vertical & overhead form & pressure pumped concrete

### **Battery Chamberlin, Golden Gate NRA, California**

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**Structural Repair** - Advanced glass fiber composite reinforcing appropriate for conditions/in compliance with historic preservation standards; vertical & overhead form & pressure pumped concrete, new drainage system, falling concrete safety hazard in open visitor area mitigated

# CPI Foundation

Increasing Readiness for Our Veterans, Our Infrastructure, Our National Parks



## Project Profile: Ft. Point National Historic Site

**project** Infrastructure, Public Access

**objectives** Military-to-Civilian Career Training, Construction, Increase Safe Access

**team** Active Duty Military Service Members

**completed** 2020-21

**owner** National Park Service, in cooperation with Golden Gate Bridge, Highway, and Transportation District, and with the Golden Gate National Park Conservancy

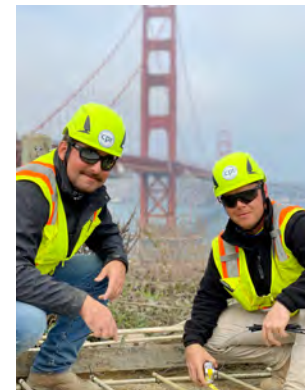
**location** San Francisco, California



Ready mixed concrete truck and pump setting up just after daybreak at project site



Placing & finishing pumped concrete



Active duty military training participants

### Project Highlights

- **Outcomes:** Replaced existing decomposed granite walk/bike path with integrally colored, exposed aggregate concrete for durability, clean appearance, low maintenance, and public safety
- **Special Considerations:** Infrastructure work at high-traffic public thoroughfare, difficult logistics at physically constrained site, match existing decomposed granite appearance, utilize glass fiber reinforcing bars for long-term resiliency (eliminate corrosion over time in aggressive chloride-rich environment), coordinate team, owners, & industry for strict COVID compliance
- **Work Items:** Remove existing decomposed granite; create on-site concrete finish mock-ups for NPS approval; dig/cut concrete placement area; install sub-base, edging material, & glass fiber reinforcing bars; place ready mixed concrete via pump and truck discharge (one or other in different areas as dictated by tight site); hand-place/expose aggregate for surface texture & appearance; ensure site safety for team & public

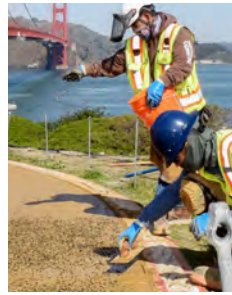
## CPI PROJECT PROFILE details Ft. Point National Historic Site



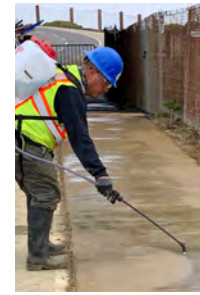
Site prep & glass fiber reinforcing bars installed



Placing truck discharged concrete



Placing/embedding special aggregate for later surface exposure



Applying concrete surface retarder



Night work to water blast & expose aggregate



Saw cutting expansion joints on hardened concrete



Finished product



Former student hired by local company joins for day as mentor for active duty participants



The proud team

## CPI FOUNDATION PROJECT & TECHNICAL CAPABILITIES

- Expert staff engage hands-on and manage teams of highly qualified and vetted members of our active duty armed forces preparing for transition to civilian careers
- Self-perform concrete, wood, steel, & composite construction as design-build projects coordinated with owners; larger projects include self-performed work in addition to managing consultants & sub-contractors
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## Project Profile: Battleship Row Fleet Moorings, Pearl Harbor

**project** Structural Repair: Infrastructure

**objectives** Military-to-Civilian Career Training, Historic Preservation, Infrastructure Advancement

**team** Active Duty Military Service Members

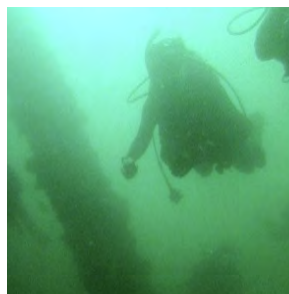
**completed** Ongoing

**owner** National Park Service

**location** Pearl Harbor National Monument, Oahu, Hawaii



Battleship Row Fleet Moorings



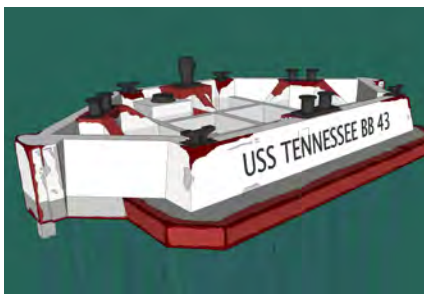
Underwater condition assessment



Assisting NPS on archaeology testing



Active duty military CPI team member



3D digital model documenting deterioration & battle damage



Pumping sand ballast out of mooring structure to allow inspection/repair



Exposed structure after sand removal



Concrete drilling to collect samples for chloride testing

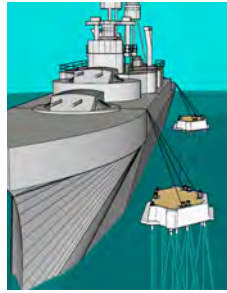
### Project Highlights

- **Outcomes/Work Items:** Ongoing work to date includes Historic Structure Report writing & associated research, above & below water condition assessment, 3D digital modeling, assistance to NPS on archaeological testing, site specific safety plan, proposed repair project planning; theater building repairs
- **Special Considerations:** The historic Fleet Moorings and USS Arizona Memorial visually define Battleship Row, site of the Dec. 7, 1941 Pearl Harbor Attack; structures included in the Pearl Harbor National Memorial; CPI's program & partnerships engaging to help ensure Mooring structural durability; existing deteriorated conditions echo the effects of time, use, & environment on infrastructure throughout the U.S.

## PROJECT PROFILE details Battleship Row Fleet Moorings, Pearl Harbor



Fleet Mooring historic construction photo



Moorings historically used in pairs to secure battleships (CPI model)



Active duty military CPI team member



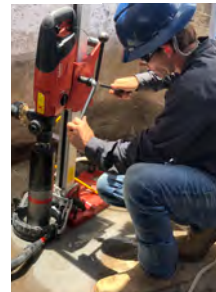
Safety first



CPI Dive Team



CPI active duty military team with visiting military leadership on Fleet Mooring, USS Arizona memorial in background



Vertical core drilling for material testing



Horizontal core drilling for material testing



CPI team member nearing civilian transition greeting potential industry employer

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# CPI Foundation

Increasing Readiness for Our Veterans, Our Infrastructure, Our National Parks



## Project Profile: Alcatraz Penitentiary Roof Access

**project** Structural Building Repair

**objectives** Military-to-Civilian Career Training, Historic Preservation, Increase Safe Access

**team** Military Veterans, College Students

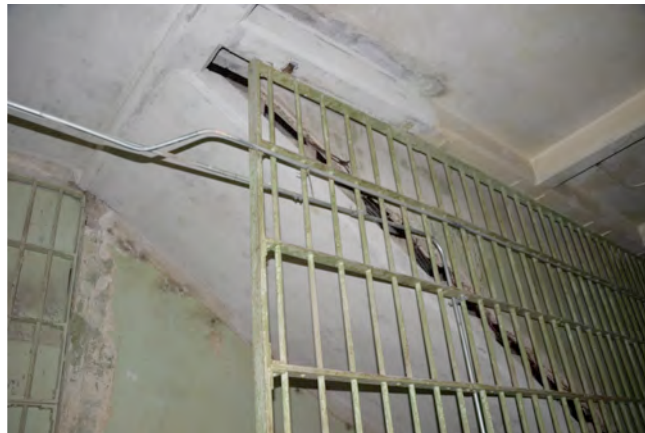
**completed** Summer 2015

**owner** National Park Service

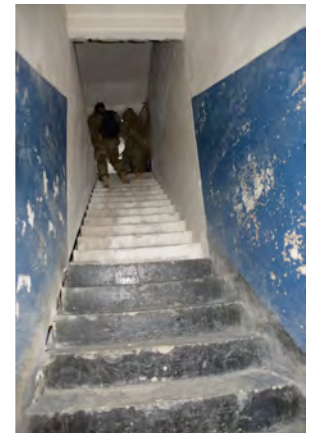
**location** Alcatraz Island, San Francisco, California



Before: extensive concrete deterioration & steel corrosion, unsafe conditions



After Below: all repairs completed from below to retain historic fabric above



After Above: stair treads & space above retain all historic fabric and character

### Project Highlights

- **Outcomes:** Repaired stairs, landing, & structural beams restoring safe access to sole roof entry point
- **Special Considerations:** Character-defining features maintained - stair treads with their story-telling indentations from over a 100 years of foot travel were suspended in place with work completed from below; protected historic Native American wall markings on opposite wall; night work as necessary to minimize disruption of 5,000 daily visitors in adjacent spaces
- **Work Items:** Overhead concrete form & pump under pressure on sloped surface (commonly accepted in industry as among the most technically challenging repair methods); finish concrete to historic texture; build wood formwork & shoring; place steel reinforcing; manage enclosed space working conditions; ensure project site safety for team & NPS staff, and safety for visitors

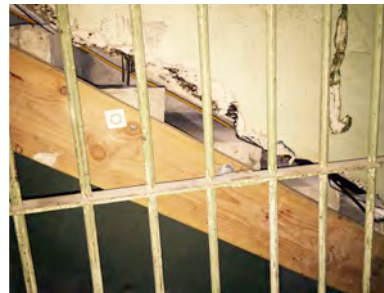
## CPI PROJECT PROFILE details Alcatraz Penitentiary Roof Access



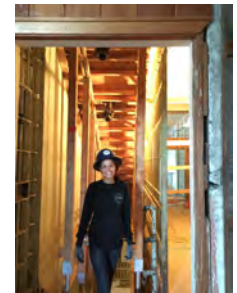
Beam formwork; new beams support repaired landing at top of stairs



Formwork & safety shoring



Historic concrete stair treads suspended in place while repairs completed from below



Team member



Concrete mixer; repairs completed at night to avoid visitor interruption



Concrete pump with hoses reaching up into confined space



Moving concrete-loaded hose to next port during high-pressure pumping



CPI military veteran participant explaining project during visit from U.S. Army chain of command

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## Project Profile: Red Barn

**project** Structural Building Repair, Seismic Stabilization

**objectives** College Student Field Training, Historic Preservation, Owner Operational Need

**team** College Students & Community Volunteers

**completed** 2011-12

**owner** National Park Service

**location** Miwok Riding Stables, Golden Gate National Recreation Area, San Francisco, California



Before: Existing conditions, building rear



In Progress Top: New roof installation; Bottom: Splicing new wood members to historic



In Progress: Lifting entire structure to straighten, construct new foundation



After: Repairs complete, building rear

### Project Highlights

- **Outcomes:** Overall structure repaired, entire building lifted and placed back down on new foundation, seismic stabilization, new roof over historic framing
- **Special Considerations:** NPS goal to rehabilitate the structure for eventual use and mitigate immediate safety concerns due to location in active visitor area; CPI completed project and invited community participation during special open days; NPS staff joined the team for a “barn painting day” at project completion
- **Work Items:** Coordinated with local house moving company to lift entire structure; worked with structural engineer to straighten structure; preserved historic wood members when possible; added new concrete foundation; added new flooring; added interior shear strengthening, added new roof over historic framing to preserve historic appearance from inside; repaired/rebuilt barn doors



## PROJECT PROFILE details Red Barn



Top: Barn in lifted condition, placement of new concrete foundation; Bottom: foundation formwork



Foundation concrete placement



CPI & NPS partnering to train team members



Pre-project: Historic wood foundation rot



New foundation



Straightening the structural frame after barn lifted off foundation



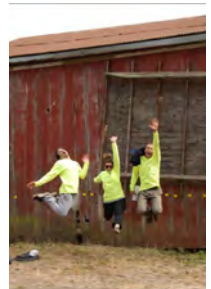
Top: Existing condition; Bottom: preserved/new members



Completed roof interior, preserved historic framing & decking remain visible



Painting repaired barn with NPS staff



Celebrating achievement & hard day of work

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## Project Profile: Wheeler Middle School

**project** New Construction: Improved Access

**objectives** Military-to-Civilian Career Training, Operational Need

**team** Active Duty Military Service Members

**completed** Spring 2017

**owner** U.S. Army

**location** Wheeler Army Air Field, Wahiawa, Hawaii



Before: Red clay dirt/mud at entrance



In Progress: Site preparation



In Progress: Placing concrete



After: Completed project

### Project Highlights

- **Outcomes:** New sidewalk, new bike rack slab & racks, bench footings & installation
- **Special Considerations:** School located on military base; collaborated with teacher/parent association for projects identified as priorities, responded to student request for “buddy bench” footings and installation as a place for kids to meet new friends
- **Work Items:** Develop project plan; develop site lay-out & drainage design, manage military heavy equipment operator; coordinate with local concrete ready-mixed producer to deliver concrete; compact soil & base; place concrete & finish; build wood formwork & shoring; place steel reinforcing; ensure project site safety for team, school staff, and visitors

## PROJECT PROFILE details Wheeler Middle School



Pre-project formwork and ready-mix concrete training



Top & Bottom: Managing heavy equipment work



Preparing sub-grade



Placing pipe to be embedded in concrete



Building custom formwork



Reinforcing steel placement



Measuring & cutting reinforcing



Project planning: site surveying



"Buddy bench" installed



Bike racks installed

## CPI FOUNDATION PROJECT & TECHNICAL CAPABILITIES

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## Project Profile: Windy Gulch, Alcatraz Island

**project** Site Feature Repair

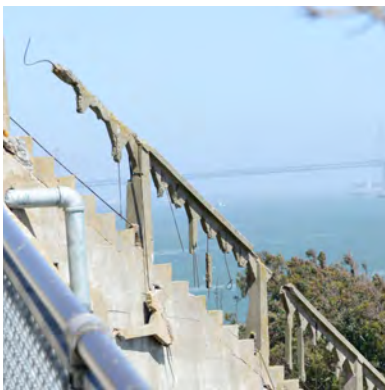
**objectives** Military-to-Civilian Career Training, Historic Preservation, Visitor Access to Closed Area

**team** Military Veterans, Active Duty Military Service Members

**completed** Fall 2017

**owner** National Park Service

**location** Alcatraz Island, Golden Gate National Recreation Area, San Francisco, California



Before: Deteriorated conditions, no visitor access



In Progress: Precast concrete panels built off-site, moved & temporarily held in place while team built concrete posts & hand rail in place (Golden Gate Bridge in background)



After: Area now accessible for visitors

### Project Highlights

- **Outcomes:** New precast concrete railing panels, new concrete cast-in place hand-rail and posts with footings into historic stair, new railing system below stair, historic stair treads repaired, reopened to public after many years of closure
- **Special Considerations:** Difficult logistical and safety challenges working next to cliff and transporting materials, equipment, generators, and precast panels weighing nearly 300 pounds to the remote site while ensuring no disturbance to nesting birds
- **Work Items:** Research historic configuration, assess existing conditions, develop site specific safety plan, selective demolition, build formwork and safety barriers, install reinforcing, install wire mesh for life safety in railing panel openings

## PROJECT PROFILE details Windy Gulch, Alcatraz Island



Visit and on-site instruction from industry executive



CPI constructed safety railing in place during project



Removing formwork from completed precast panel



Transporting 300-pound precast concrete panel up hill



Work site with difficult project access from below



Completed stair railing from cliff side



Constructing walkway at base of stairs



Installing welded wire mesh for visitor safety



Completed project open to the public

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## Project Profile: Hawaii Theater Center

**project** Structural Building Repair

**objectives** Military-to-Civilian Career Training, Historic Preservation, Community Service

**team** Active Duty Military Service Members

**completed** Spring 2019

**owner** Hawaii Theater Center

**location** Honolulu, Hawaii



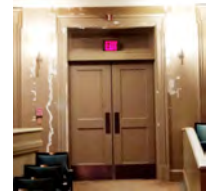
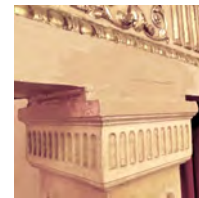
In Progress: work at exterior of building with CPI team and public safety barriers in place



In Progress: column and soffit repairs



Before (top): structural crack; In progress (bottom): building up repair material to match profile



Before (top): cracks at door surround; After (bottom)

### Project Highlights

- **Outcomes:** Exterior & interior structural and aesthetic repairs with historically appropriate finishes
- **Special Considerations:** Connecting with community organization for historic preservation as part of CPI's Pearl Harbor National Memorial partnership
- **Work Items:** Plan and manage multiple simultaneous projects, repair plumbing in damage zone; interior wall; mix on-site & hand-place concrete, finish concrete to historic texture; build wood formwork & shoring; place steel reinforcing; manage safe work in enclosed space; ensure project site safety and accessibility for team, building staff, and visitors

## PROJECT PROFILE details Hawaii Theater Center



Assessing conditions, planning repairs



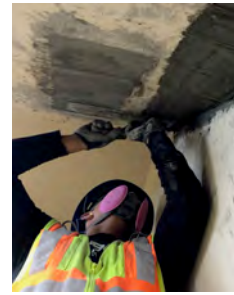
Partial depth slab repair: concrete removal; reinforcing hand placed placement



Partial depth slab repair concrete hand placed



Deteriorated concrete removal at soffit



Soffit repair



Prep for next CPI project, US Marine Memorial, Pearl Harbor Visitor Center



CPI active duty military team discussing project with clients



Team field trip to learn about high-rise building construction



The team



Repaired door surrounds at back of theater

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## Project Profile: Power House, Alcatraz Island

**Project** Structural Building Repair

**objectives** Military-to-Civilian & Student Career Training, Historic Preservation, Increase Safe Access

**team** Military Veterans, College Students

**completed** Summer 2013

**owner** National Park Service

**location** Alcatraz Island, Golden Gate National Recreation Area, San Francisco, California



Before: Power House



Top: Exterior front façade in progress;  
Bottom: Exterior front façade repairs completed, prior to painting



Before: Interior column



In Progress:  
Interior column with custom formwork for pumped concrete



After: Interior column with preserved historic material, prior to painting

### Project Highlights

- **Outcomes:** Repaired interior & exterior front façade, repaired interior beam & columns
- **Special Considerations:** Historic metal windows/doors originally placed integrally with façade concrete - repair project included their removal/storage during selective demolition then replacement in original configuration with repair concrete material; temporary interior wood wall constructed to protect solar array batteries
- **Work Items:** Vertical and overhead concrete form & pump under pressure (commonly accepted in industry as among the most technically challenging repair methods); finish concrete to historic texture; build wood formwork & shoring; place steel reinforcing; preserve historic metal windows/doors; ensure project site safety & accessibility for team & NPS staff, and safety for visitors



## PROJECT PROFILE details Power House, Alcatraz Island



Interior façade existing conditions



Interior façade beam formwork



Volunteer structural engineer training team on proper placement of steel reinforcing



Scaffolding constructed by team at facade



Team member grinding surface of repairs to achieve historic texture; safety first



Historic window/deteriorated concrete



Historic window removed during construction



Deteriorated concrete removed, reinforcing steel cleaned/new steel installed



Historic window and doors reinstalled integrally with façade concrete

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## Project Profile: Battery Chamberlin

**project** Structural Building Repair

**objectives** Military-to-Civilian Career Training, Advanced Technology for Historic Preservation

**team** Active Duty Military Service Members

**completed** Fall 2018 & Spring 2019

**owner** National Park Service

**location** Golden Gate National Recreation Area, San Francisco, California



Before: Deteriorated condition, visitor safety compromised



After: Repairs complete



In Progress: Advanced technology glass fiber composite reinforcing for increased durability



In Progress: concrete placed via pressure pumping

### Project Highlights

- **Outcomes:** Repaired concrete, new drainage system
- **Special Considerations:** Water intrusion due to non-functioning drainage system and vegetation area above caused embedded steel corrosion and concrete deterioration; loss of historic fabric and falling concrete safety hazard in open visitor area; utilized advanced glass fiber composite reinforcing appropriate for conditions and in compliance with historic preservation standards in concrete repair
- **Work Items:** Research historic configuration, assess existing conditions, develop site specific safety plan, selective demolition, erect scaffolding & safety barriers, build formwork, install glass fiber composite reinforcing, mix/place concrete by hand in isolated areas & place concrete with pressure pumping for overall repairs; paint structure to match historic

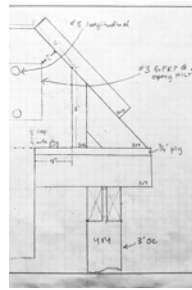
## PROJECT PROFILE details Battery Chamberlin



Concrete carbonation testing



Condition assessment; drawing plans



Formwork drawing by military spouse team member



Composite bars & drainage pipe prior to being embedded in concrete



Work site; Golden Gate Bridge in background



Condition assessment revealed non-functioning drainage pipe



New drainage pipe installed, later embedded in concrete



Ready mix concrete truck arrives at dawn, ahead of high visitor traffic



Concrete from ready mix truck delivered through pump and hoses; all hands on deck to manage hoses heavy with concrete



CPI team member interviewed by press during project

## CPI FOUNDATION PROJECT & TECHNICAL CAPABILITIES

- Expert staff engage hands-on and manage teams of highly qualified and vetted members of our active duty armed forces preparing for transition to civilian careers
- Self-perform concrete, wood, steel, & composite construction as design-build projects coordinated with owners; larger projects include self-performed work in addition to managing consultants & sub-contractors
- Repair, new construction, and historic preservation projects in urban, remote, wilderness, and marine areas include historic structures & site features; visitor & utility facilities; trails; water utility systems; projects that improve access, health, safety, & recreation, including ADA access; roads; bridges; tunnels; and parking lots
- Leader in advancing innovative technological solutions to structural and infrastructure challenges that collectively promote durability, sustainability, and comply with preservation, environmental, & other regulations

The CPI Foundation is a proven public/private partnership program working with the U.S. Departments of Defense and Interior, and with industry companies across the country. The program benefits the United States and its taxpayers by combining the strengths and needs of three national concerns: our military veterans, our infrastructure, and our national parks. Helping avoid potential military-to-civilian transition pitfalls, CPI offers career preparation & placement and hands-on training programs for transitioning active duty service members at all levels from all service branches while completing construction, repair, deferred maintenance, and safety/access projects in national parks and public lands.