PtD FROM THE PROJECT AND CONTRACTOR’S PERSPECTIVE

by

Jimmie Hinze

University of Florida
What Role has Prevention Through Design Played in contributing to the reduction in the construction injury rate in the past 20 years?
Methodology:
Personal interviews conducted with 16 contractors involved in industrial, commercial and residential construction (some opinions were contradictory) + observations over the past 10 years
ONE FACTOR HAS NOT CHANGED IN 20 YEARS

THE TYPE OF CONTRACT UTILIZED MAKES A CONSIDERABLE DIFFERENCE IN HOW PtD IS APPLIED
PROJECT TYPE

[Graph showing the comparison of RIR (Risk Index Rate) between Design-Build and Construction Only projects.]

Source: Owner's Role in Construction Safety, CII, 2003
Design Groups on Industrial and Power Projects are familiar with PtD, especially in the Design-Build arena. This is reflected in the standardized designs, checklists and boilerplate designs.
Design Build Firms Often Use a Formalized Process of Implementing PtD

Several Design Build firms have implemented these PtD processes in the past 5 years.
Formalized Process

- Form a PtD team for each project
- Conduct periodic reviews throughout the design phase
- PtD team may address safety issues during construction
This is evidenced through more pre-fabricated work, which is safer than field-fabricated work.

Modularization has also increased which improves productivity, quality, and safety.

Better access.

Less elevated work.
When The Design Is Performed By A Separate Entity, PtD Is Less Evident
From the Design Firms, “we have not seen a lot of it” (PtD)
Making Changes Invariably Results in a Budget Dispute

- It is much cheaper if changes are made in the construction budget as opposed to the operations budget.

- The use of PtD is still Owner dependent (a few owners are highly focused on safety, while others see it as an added cost).
TYPE OF PROJECT

- ALSO A FACTOR IN THE IMPLEMENTATION OF PtD
The Type of Project is Often Associated with the Extent that PtD is Employed
INDUSTRIAL AND POWER PROJECTS

Owners tend to be proactive on safety.

Owners are the Drivers of PtD
Owners maintain long-term commitments to safety
Contractors must have a history of good safety performance before they are considered for contract award.
Designers Often have a Mandate to Address PtD
Requests for PtD changes are almost always granted.

With knowledge comes the obligation to use it.
The growth of the use of PtD is evidenced through the reduced need for safety changes.

- There is also less reluctance of contractors to request changes that address safety, because they are generally accepted (this may lead to more safety changes).

- Definitely a change from the 1990s.
Proactive Owners ensure that the Designers address Safety in the early design stages.
Fall Protection is clearly addressed more commonly in industrial project designs.

Access to areas also tend to be addressed in recent designs.
Although less common, many design changes are still made during the construction phase, when it is more costly.
Challenges for PtD increase on Commercial Projects
Contractor Selection on Commercial Projects

- Primarily based on price
- Design preparation commonly is still performed in the traditional manner
Owners are largely unenlightened about PtD

Only a few Owners aggressively promote PtD on Commercial Projects
Parapet heights might be designed below 39”, but some owners are reluctant to spend the added amounts to make it safe.

- They do not even consider that the safety of the operations and maintenance personnel would be addressed for the life of the project.
On Commercial Projects, the Designers are Primarily Architects

- Generally architects consider construction safety to be the sole responsibility of the contractor
- PtD means liability for the architect
 Designs could be altered on many commercial projects to effectively address:

- Access
- Egress
- Fall Protection
- Fire Protection
- Prefabrication
Construction Worker Safety is not a Common Concern of Most Architects

This is an issue that has not changed appreciably in the past 20 years.
The Real Challenge is in the Residential Sector, especially as it pertains to fall protection
On some residential projects, there is no fall protection built into the design

- On those residential projects where fall protection is built into the design, the fall protection is invariably removed
PtD is Owner Driven

1. OWNER ➔ Designer ➔ CONTRACTOR

PtD is Contractor Driven

1. OWNER ➔ Designer ➔ CONTRACTOR
2. OWNER ➔ CONTRACTOR ➔ Designer
3. CONTRACTOR ➔ DESIGNER ➔ OWNER
Conventional

PtD is Owner or Contractor Driven

1. PtD is Driven by the Owner
2. PtD is Driven by the Designer
3. PtD is Driven by the Contractor

Design-Build

PtD is D-B firm Driven

1. PtD is Driven by the D-B firm
SUMMARY

- INDUSTRIAL PROJECTS: PtD IMPLEMENTATION HAS GROWN STEADILY

- COMMERCIAL PROJECTS:
  - PtD IMPLEMENTATION HAS BEEN SLIGHT

- RESIDENTIAL PROJECTS: Little has changed in 20 years
SUMMARY

DESIGN-BUILD CONTRACTS: PtD IMPLEMENTATION IS ACTIVELY IMPLEMENTED

CONVENTIONAL CONTRACTS:

PtD IMPLEMENTATION HAS BEEN SLIGHT
Thank You