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# Building For The 21<sup>st</sup> Century

Why We Need Digital Construction

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**DIRTT**

- 
- 400 Million in Annual Revenues
  - Publicly Traded on the TSX – DRT & NASDAQ DRTT (USD)
  - 1,200 DIRTTbags Strong
  - 7,800 clients worldwide.
  - Over \$1 billion of our solutions shipped since launching in 2005
  - Lead the industry with developing first PCR (*product category rule*) for transparency & has an Environmental Product Declaration.
  - 4 Factory Locations In North America
  - Work With 290 of 2018's Fortune 500 Companies
  - Corporate > Healthcare > Education
  - Design Assist | Multi-Trade Subcontractor
  - Most sustainable method of interior construction

# About DIRTT

## **Personalized prefab. Really.**

Build the perfect interior space for what you need now — and whatever the future brings. Designed to respond to your needs for any place, from healthcare to school or office to home life. This is digital construction at its best.



# Agenda

1. Why?
2. How? The 3 Key Elements
  - A. Software
  - B. Solutions
  - C. Process
3. Projects

# Why? A few of the key challenges on how we build interior space?



- Cost uncertainty
- Unpredictable schedules
- Vision does not match end result
- Living in obsolescence.
- Skilled labor.
- Fixed in place.
- Wasteful process.

# And in the end they will not meet today's or tomorrow's Smart building goals.



## Some statistics that advocate for a Smart Buildings focus:

- In urban settings, 87% of a day is spent inside a building
- 80% of all mobile usage is inside a building
- Smart buildings support **sustainability** and a smart sustainable building can reduce energy usage from 40% to an astounding 70%
- In certain municipalities, office space utilization is at 48%, leaving much room for smart, **flexible space** utilization
- Improved workplace design, lighting, and **air quality** can lead to an uplift of 30-40% in employee productivity
- **Health, wellness and productivity** as supported by the workplace are key trends in corporate human resource management

# The 3 Key Elements

# SOFTWARE · SOLUTIONS · PROCESS

Autocad/Revit - 1986



Design planning

Construction

Occupancy

ICE Software - 2004



Benefits:

- Cost Certainty
- Visual Certainty
- 70/30 vs. 30/70 material to labor
- Reduces punch list

Benefits:

- Speed of construction
- Less Skilled Labor needed
- Clean Construction
- Higher Quality| Fit & Finish

Benefits:

- Reuse
- Flexibility
- Access to infrastructure
- Quicker changes – plug & play

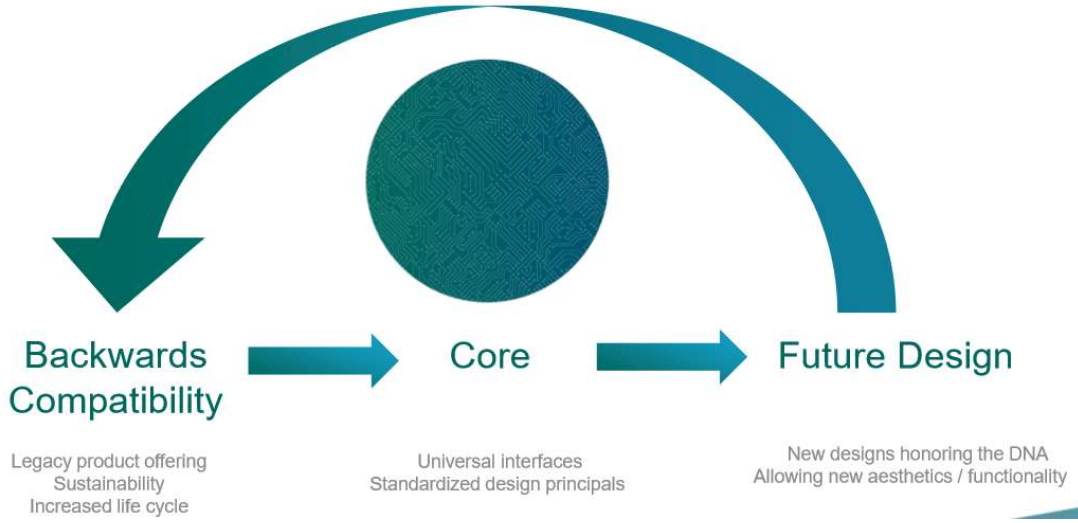
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# SOFTWARE · SOLUTIONS · PROCESS

## Our Unique DNA:

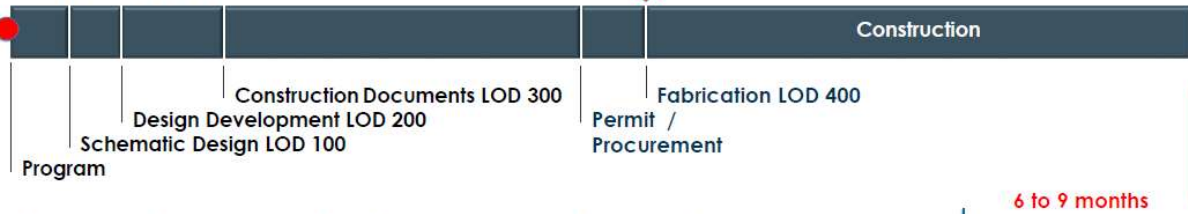


# SOFTWARE · SOLUTIONS · **PROCESS**



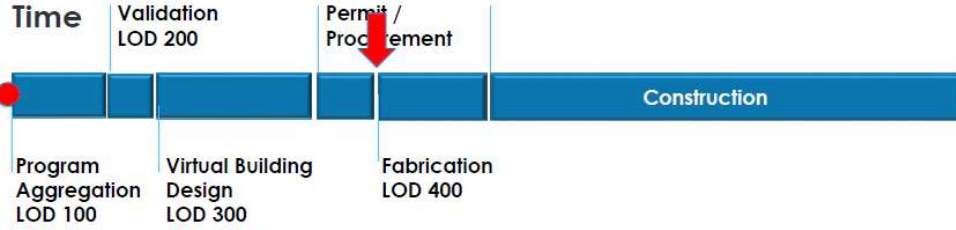
Job-site: perimeter finishing, HVAC, lighting, ceiling, fire/security

## Historic Process



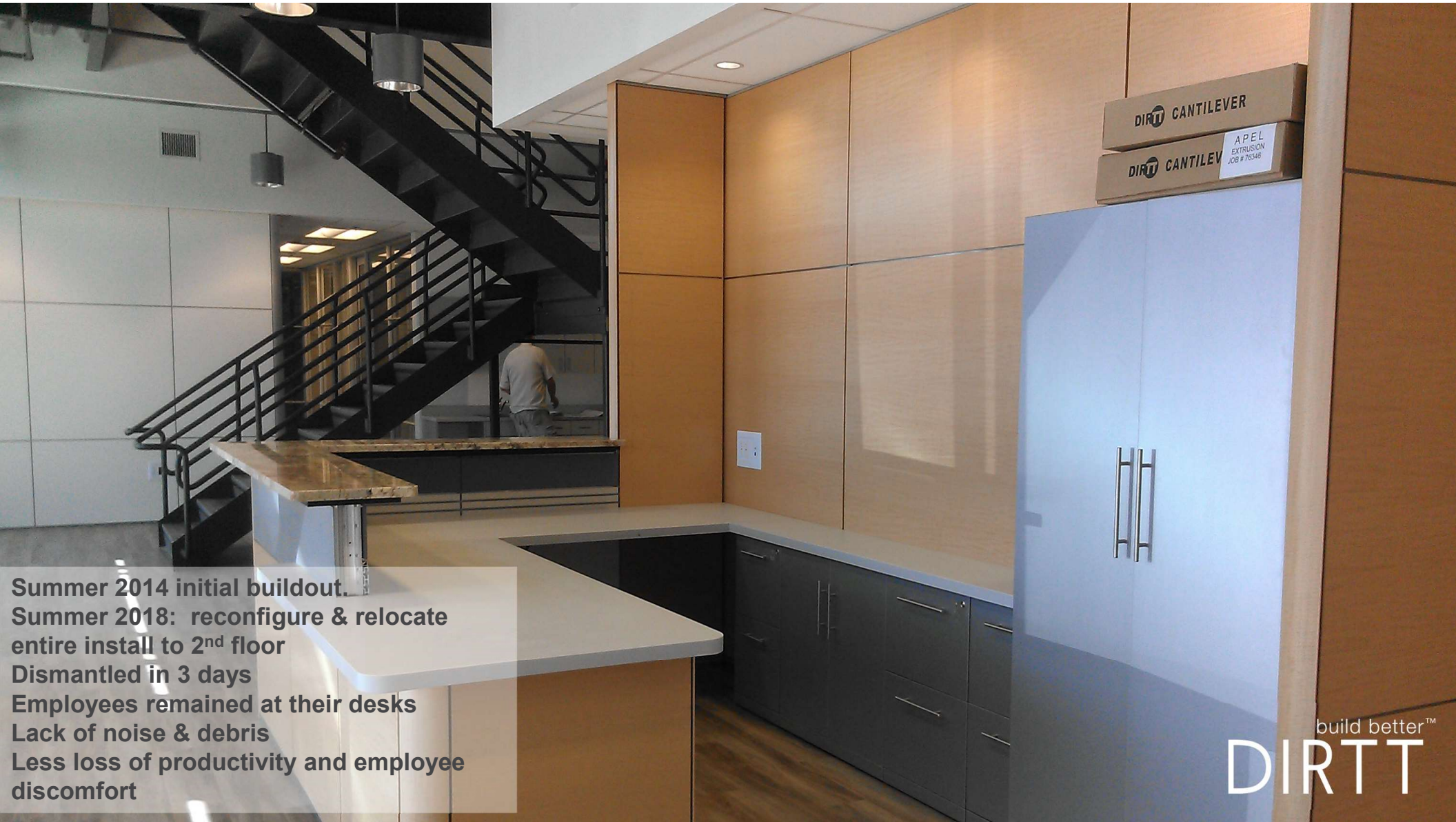
6 to 9 months

## Modular Process ~ 30% Reduction in Project Delivery Time



# Occupancy

## Agile Flexible Environments



DIRTT CANTILEVER  
DIRTT CANTILEVER APEL EXTRUSION JOB # 78348

Summer 2014 initial buildout.  
Summer 2018: reconfigure & relocate  
entire install to 2<sup>nd</sup> floor  
Dismantled in 3 days  
Employees remained at their desks  
Lack of noise & debris  
Less loss of productivity and employee  
discomfort

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## **IF this project were built conventionally.**

- Original build: 3,801 lbs of debris generated
- Original build demo: 13,303 lbs of debris generated
- New build: 5,461 lbs of debris generated

## **Due to offsite construction methods .**

- Total of 22,565 lbs of debris were diverted from the landfill
- 2 standard garbage cans of waste were generated in the entire project

# Reuse is Real:

- Complex reconfigure, 98% reuse of original materials
- Use technology to calculate materials reused & new ones needed
- New solutions arrived in under 3 weeks
- Reconfigured install took 7 days
- 2 standard garbage cans of waste were generated in the entire project



# So, Who's Building This Way?

more people than you think. less than would benefit.

## Education



## Financial services



## Healthcare



## Professional Services



## Technology



## Other



DIRTT has delivered interior construction projects to more than 7,800 clients worldwide. We've shipped over \$1 billion of our solutions since launching in 2005.



- 38,875 Square Feet
- \$45/ Square Foot
- 9 Week DIRTT Construction

Microsoft, Detroit MI

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- 15,000 Square Feet
- \$67/ Square Foot
- 5 Week DIRTT Construction

JDA, Phoenix AZ

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JDA, Phoenix AZ

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JDA, Phoenix AZ

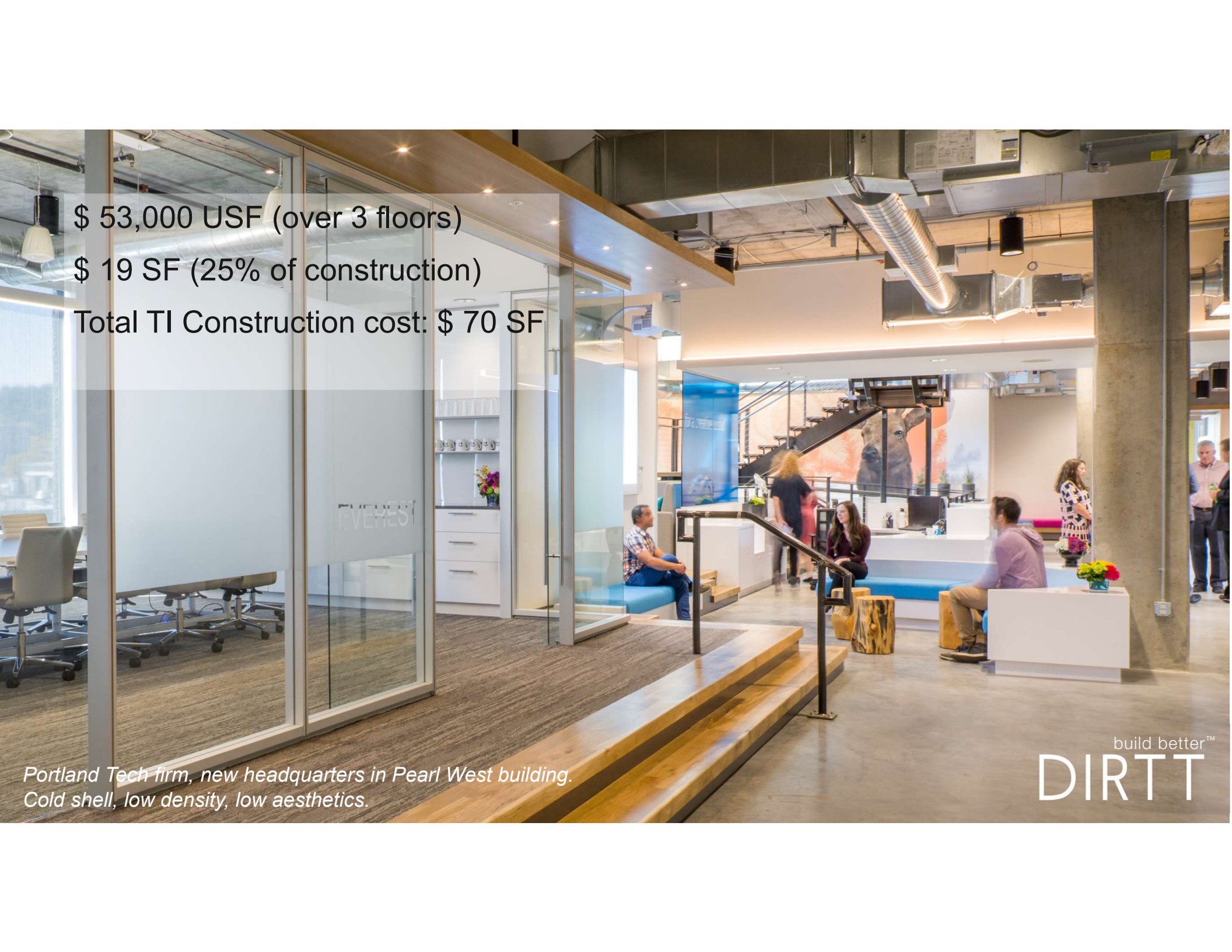
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JDA, Phoenix AZ

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A modern office interior with glass walls and a blue bench. The office is located in the Pearl West building. The space is open-plan with a mix of glass and wood. There are people sitting on a blue bench, and a man is sitting on a white desk. The ceiling has exposed ductwork and lights. The floor is concrete. The overall aesthetic is clean and modern.

\$ 53,000 USF (over 3 floors)  
\$ 19 SF (25% of construction)  
Total TI Construction cost: \$ 70 SF

*Portland Tech firm, new headquarters in Pearl West building.  
Cold shell, low density, low aesthetics.*

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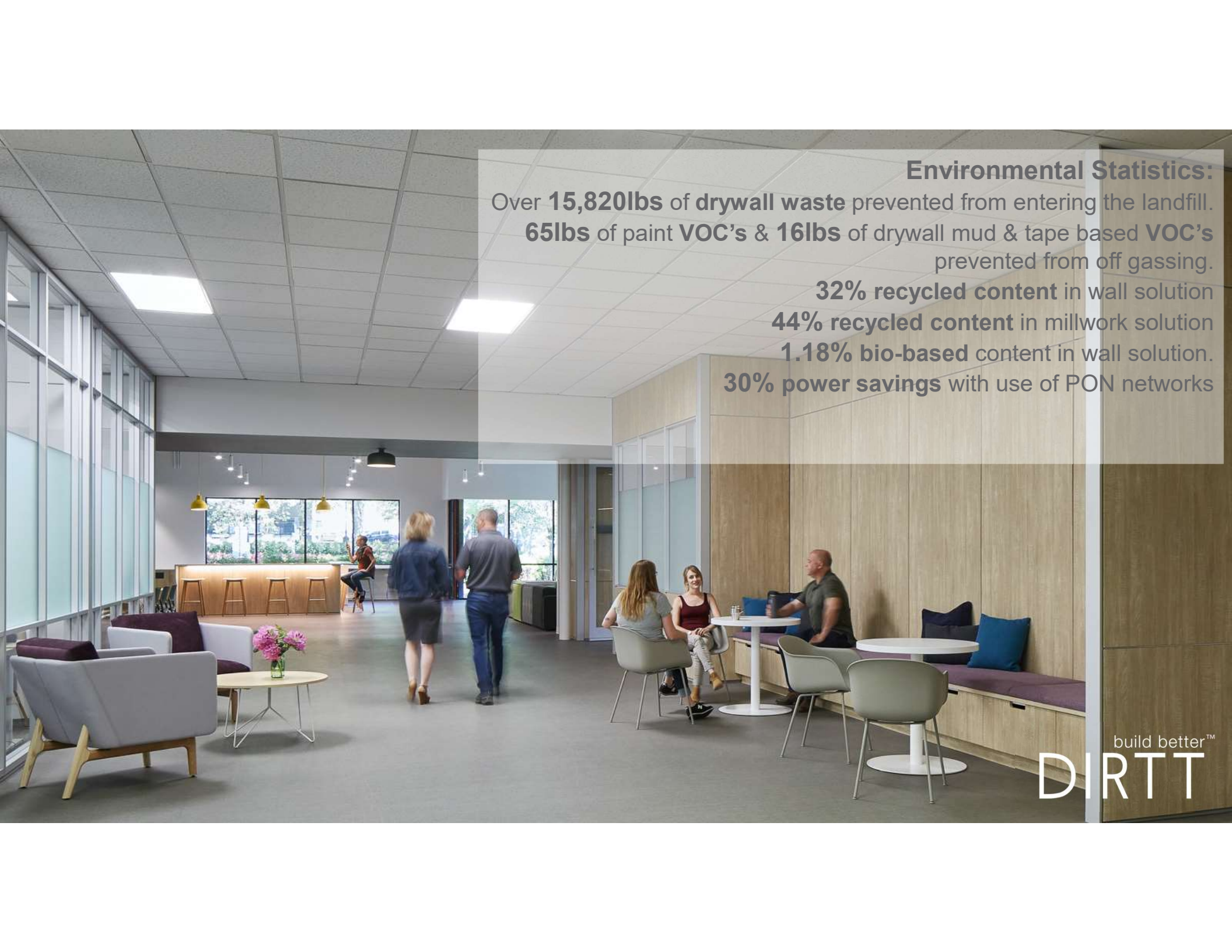
\$ 58,000 USF

\$ 20 SF (30% of total construction)

Total TI Construction cost: \$ 62 SF

*Renovation of existing one floor building in Hillsboro for headquarters  
Warm lit shell, low density, medium aesthetic*

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## Environmental Statistics:

Over **15,820lbs** of drywall waste prevented from entering the landfill.

**65lbs** of paint VOC's & **16lbs** of drywall mud & tape based VOC's prevented from off gassing.

**32%** recycled content in wall solution

**44%** recycled content in millwork solution

**1.18%** bio-based content in wall solution.

**30%** power savings with use of PON networks

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# Thank You!

DIRTT Environmental Solutions

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