

A close-up photograph of several parallel steel rebar rods, showing their textured surface and some rust. The rods are arranged in a slightly curved line, receding into the background.

# How Building Information Modeling Is Impacting Construction

C.W. Driver  
BUILDERS SINCE 1919

A background image of a construction site. In the foreground, there's a concrete slab with some rebar protruding. In the background, there are green hills under a blue sky with some clouds.

## C.W. Driver

- Builders since 1919
- General Contractor, Construction Manager
- Diverse Markets Served: Education, Retail, Entertainment, Hospitality, Healthcare, Civic

# What is BIM?

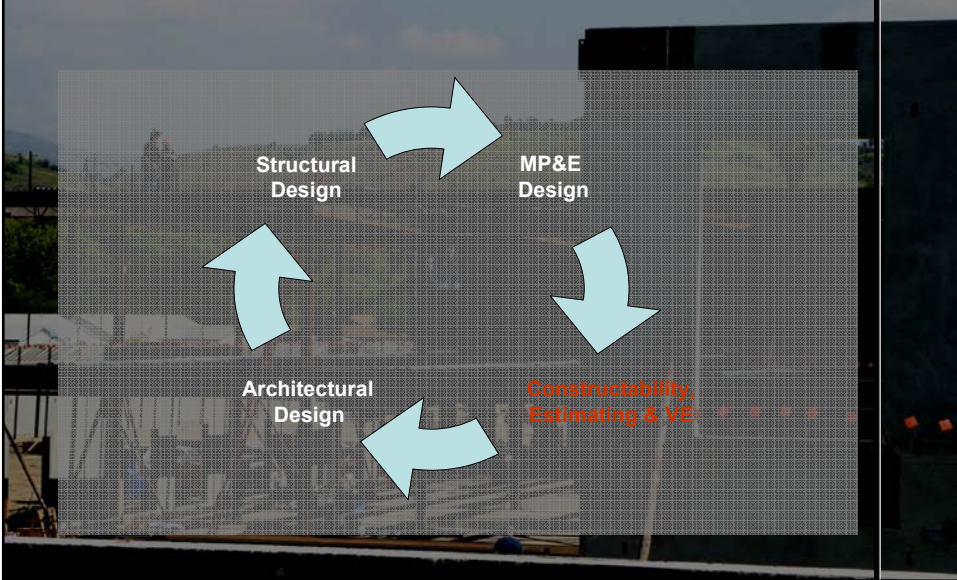
- Building Information Modeling
  - It is a collaborative process of building the model and the interaction of the project team.
- 3D is Not BIM
- 3D + Parametric Information = BIM
- Think of BIM as Virtual Construction or Construction Simulation

BIM has successfully been used in CAD/CAM for years

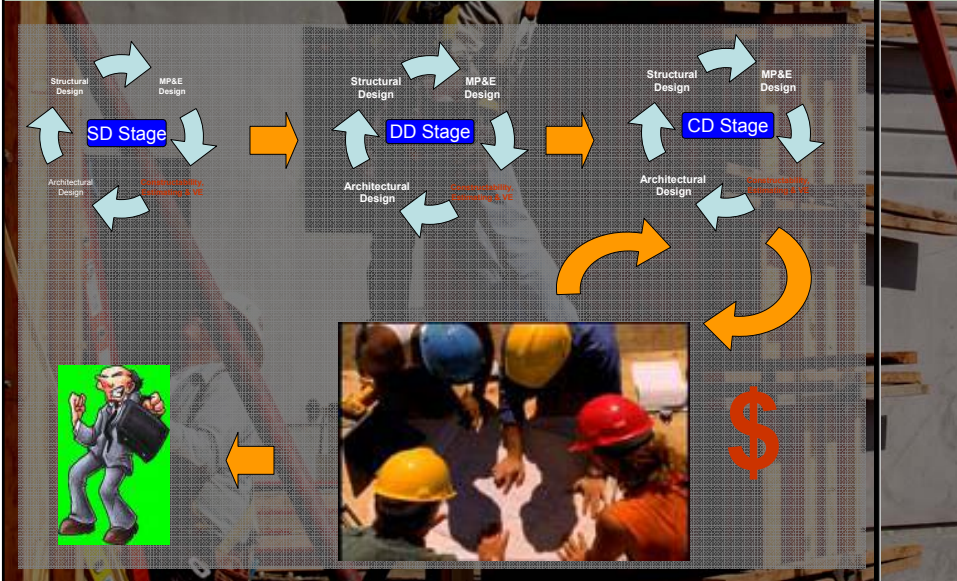


*Terminal v, Austria*

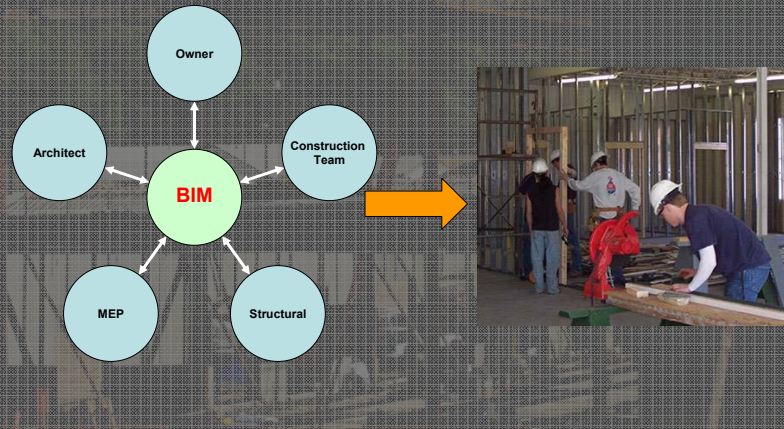
# What We Do Now



# What We Do Now



# What If We Collaborated?



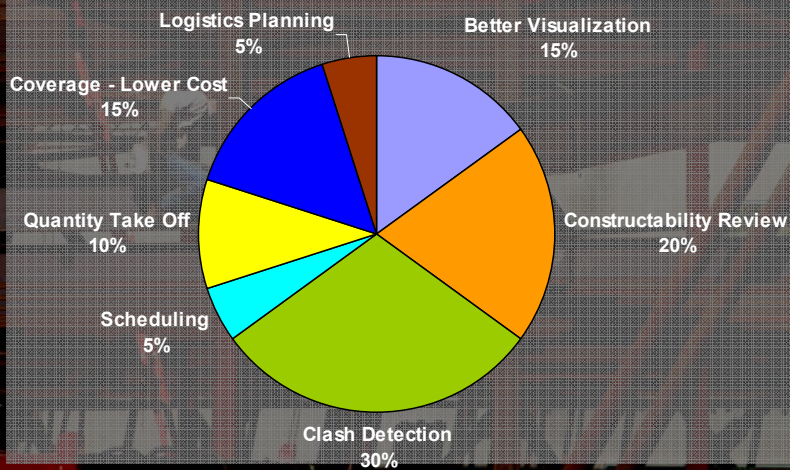
## Why...The Benefits

- Better Visualization and Coordination
- Mitigates Fear
- Minimize Waste
- Optimize Schedules

# Why...The Benefits

- Improve Efficiency
- Tracking of Costs
- Invoicing
- Control

# Diverse Benefits



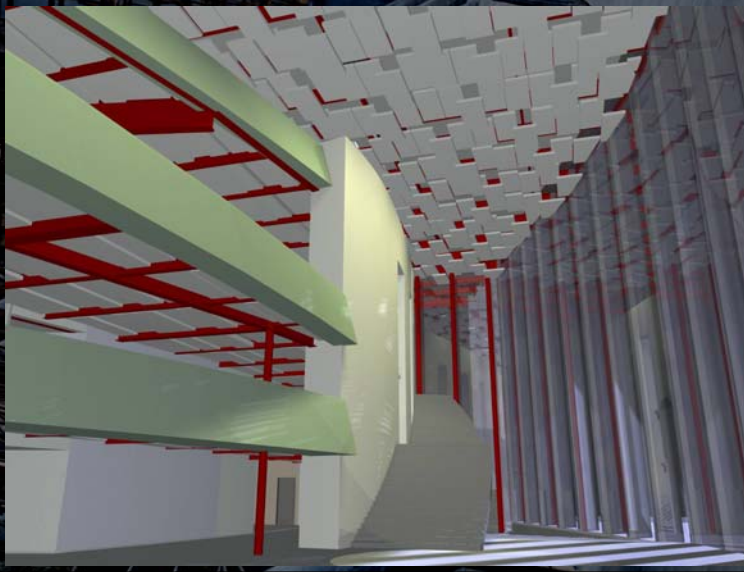
# Better Visualization



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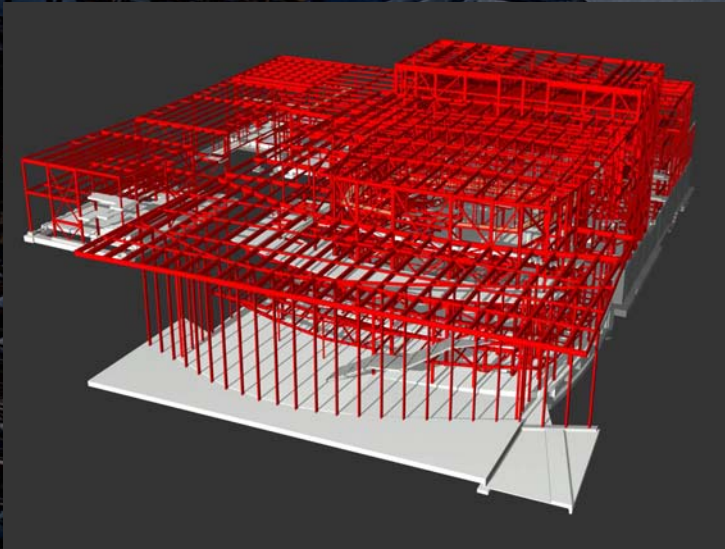
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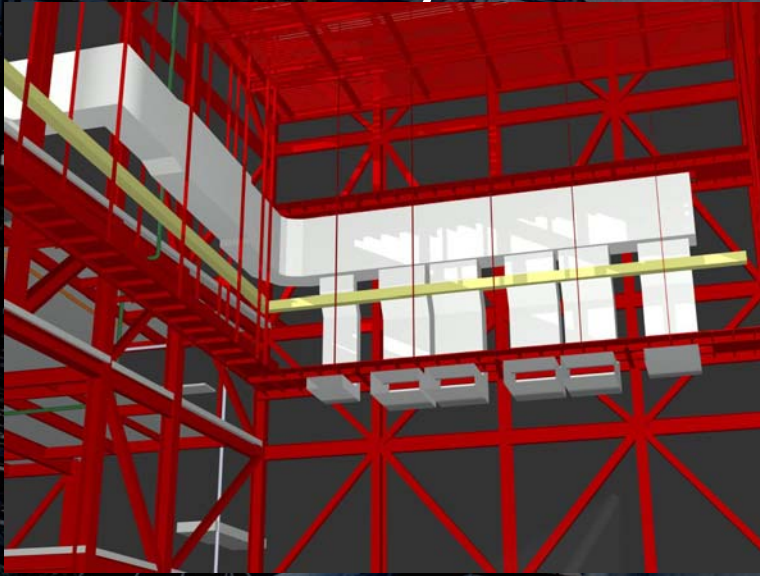
# Constructability



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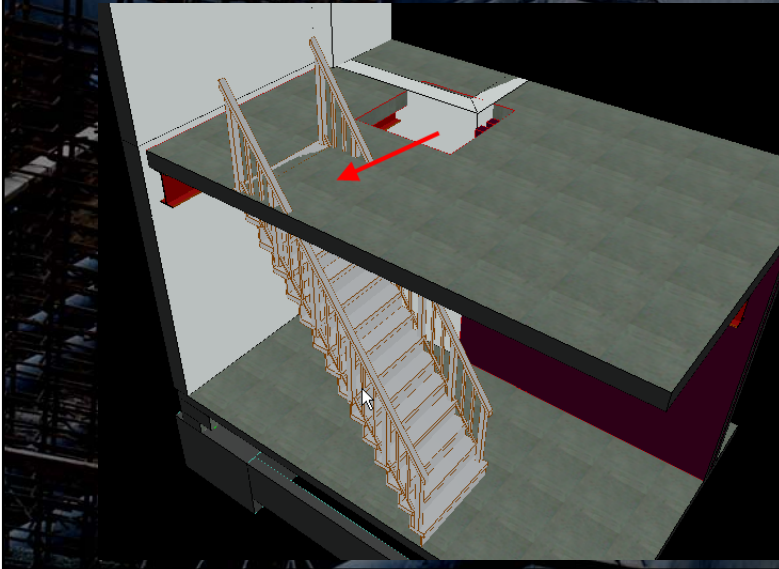
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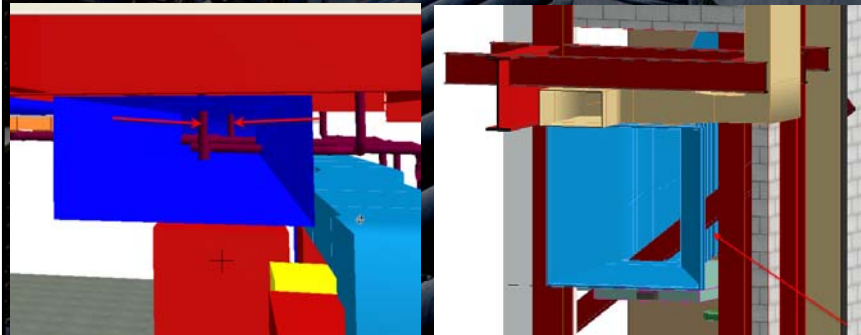
# Clash Detection



# Clash Detection

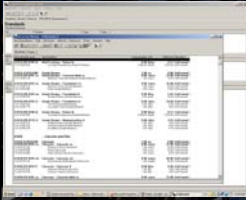


# Clash Detection



# Scheduling & Qty Take Offs

Automatic Quantity Take-off and Scheduling Task Generation



Item	Description	Quantity	Units
1	CONCRETE	10.00	CU YD
2	STEEL	5.00	TONS
3	BRICKS	10000.00	SQ YD
4	PAINT	500.00	GALLONS
5	ROOFING	2000.00	SQ YD
6	MECHANICAL	1500.00	LINEAL FT
7	ELECTRICAL	800.00	LINEAL FT
8	PLUMBING	1200.00	LINEAL FT
9	LANDSCAPE	3000.00	SQ YD
10	FOUNDATION	1500.00	SQ YD



# Who is Embracing BIM?

- Owners
- Architects
- General Contractors
- Construction Managers
- Trade Contractors
- Vendors

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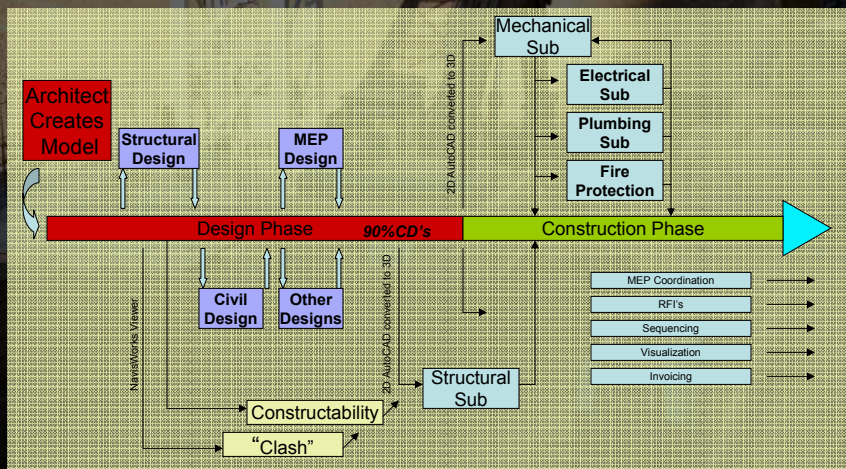
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# So What Does it Mean to Each?

- Visualization of End Product
- Better Solutions
- Mitigation of Many Common Change Orders
- Improved Process for Each Expert
  - Arch – Integrates all design components (MEP, Structural, etc.)
  - Contractor – Constructability, Bid ability, Estimating, Overall Efficiency (\$)
  - Subs/Trades- Detailing, Scheduling, Clash Detection, Billing, Efficiency
  - Owner – Benefits in \$ and Time and from all above **XXX**

# So How is it Being Used?





# Challenges?

- Cost Implications of Modeling
- Ownership of Model(s)
- Legal Issues
- Maintenance of Model
- Acceptance



## Conclusions

- BIM is “virtual construction” that both embraces/demands collaboration
- Here to stay
- Will improve process
- Affords many benefits

## Conclusions

- Level of commitment varies by parties...some see immediate application to historically manual processes
- A number of challenges remain for full deployments or embracement (ownership, liability, legal, maintenance, cost)