

# Virtual Builder's Roundtable

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# The big idea

Virtual Design and Construction -- use of multi-disciplinary performance models of design-construction projects to support (explicit, public) objectives -- *has entered AEC practice!*

# Virtual Design and Construction (VDC)

Use of multi-disciplinary performance models of design-construction projects, including

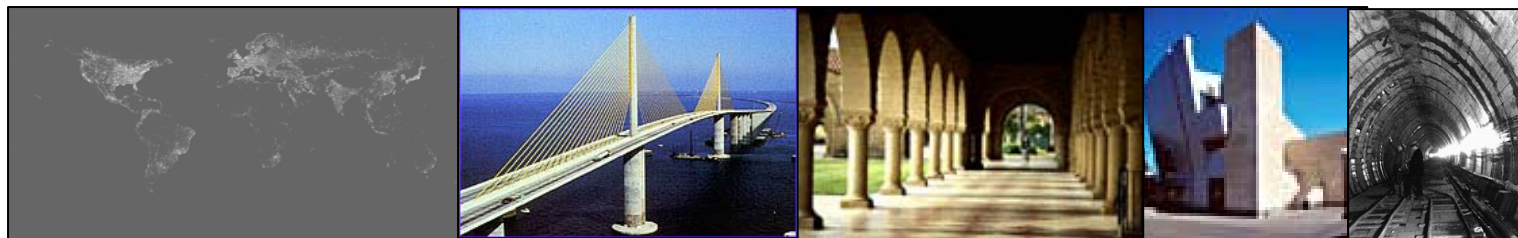
- *Product* (i.e., facilities)
- *Organization* of the design-construction-operation team
- *Work Processes*
- *Economic Impact* (i.e., model of both cost and value of capital investments)

to support (explicit, public) business objectives.

# The “plus” of Civil Engineering

Civil Engineering builds the world’s fixed physical wealth, efficiently ...

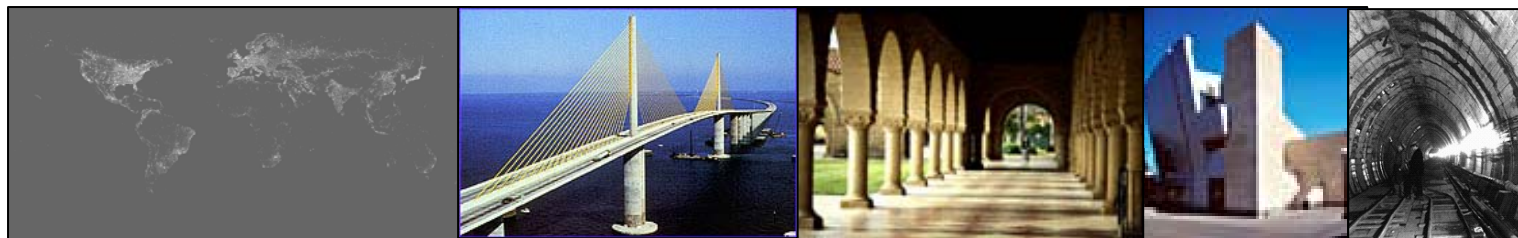
- Buildings, plants, infrastructure
- Physical systems
  - Water and sewage
  - Transportation
  - Energy production and transport
  - Telecommunications



# The “plus” of Civil Engineering

Civil Engineering builds the world’s fixed physical wealth, efficiently ... **and sustainably**

- Buildings, plants, infrastructure
- Physical systems
  - Water and sewage
  - Transportation
  - Energy production and transport
  - Telecommunications



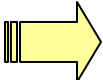
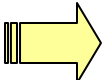
# CIFE Members and VDC

- VDC has broad support

<b>Organizational development achievement of past year (check all that apply)</b>	<b># of responses</b>
VDC coalition includes CEO support	9
VDC coalition includes Operations management support	6
VDC coalition includes Project Executive support	6
VDC coalition includes Project Management support	6
VDC coalition includes Project Engineer support	5
 VDC coalition includes R&D management support	10
Funded implementation project	9

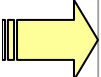
# CIFE Members and VDC

- Members are seriously committed

<b>VDC achievements of past year (check for all that apply)</b>	<b># of responses</b>
 VDC used on > 3 major projects	6
VDC used on 1-2 major projects	2
VDC used on a pilot project	5
 Bought software to support VDC and trained staff in its use	8
Hired someone to apply VDC methods	6

# CIFE Members and VDC

- Success in relating VDC methods, strategy, measurable performance

<b>What is the state of VDC in your organization? (check all that apply)</b>	<b># of responses</b>
I operate with a VDC strategy	8
 Company operates with a VDC strategy	8
IT group operates with a VDC strategy	4
Project development group operates with VDC strategy	6
Reliably build and manage a pilot with VDC 3D and 4D models	5
Reliably build and manage a major project with VDC 3D and 4D models	6
Reliably build and manage multiple projects with VDC 3D and 4D models	3
We have data that show how VDC improves schedule performance	2
We have data that show how VDC improves cost performance	1
We have data that show how VDC improves quality performance	3

8



# CIFE Members and VDC

- 2006 challenges starting to concern broad scale implementation

<b>Biggest challenges related to VDC for 2006 (check 2)</b>	<b># of responses</b>
Success of a pilot	3
Success of a major project	4
 Develop staff skills to build and manage with VDC	6
Create management support for VDC	3
 Establish baseline and VDC performance	5
Implementation of a specific technology	5

# CIFE Members and VDC

- The driving goals ...

<b>Which 2010 outcome business objectives for your organization that relate to VDC do you support? Check all that apply.</b>	<b># of responses</b>
Breakthrough quality (conformance $\geq$ 20% better than baseline)	10
Breakthrough schedule (conformance $\geq$ 30% better)	9
Breakthrough cost (conformance $\geq$ 20% better)	8

# CIFE Members and VDC

- Source: CIFE Bulletin

*Center for Integrated Facility Engineering*

## CIFE

### Center for Integrated Facility Engineering

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Mission ●

People ●

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Publications ●





*"In partnership with our industrial members, CIFE's mission is:*

- to be the world's premier academic research center for Virtual Design and Construction of Architecture - Engineering
- Construction (AEC) industry projects."

### NEWS

[CIFE Calendar 2005-06](#)

[CIFE Member Bulletin December 2005](#)

[CIFE Industry Advisory Board Meeting 2005](#)

[CIFE Summer Program 2005](#)

#### CIFE in the News

Martin Fischer, Cameron Diaz, Bill McDonough



>Cameron Diaz & Bill McDonough were a hit in Martin Fischer's class on Sustainability in October. Check the online MTV video at: [http://www.mtvu.com/on\\_mtvu/stand\\_in/cameron\\_diaz.jhtml](http://www.mtvu.com/on_mtvu/stand_in/cameron_diaz.jhtml)

>Tom Sawyer covered the CIFE Summer Program for ENR. His article is: ["3-D IMAGING Maturing Visualization Tools Make Ideas Look Real"](#)

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