



# BIM

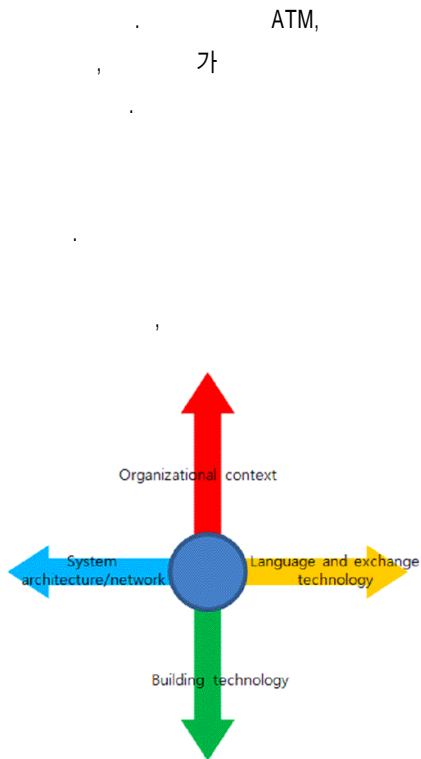


가

[ 1]

4가

(1)



[ 1] 가 (Chuck Eastman, 1999)

( , )

가

(2)

가

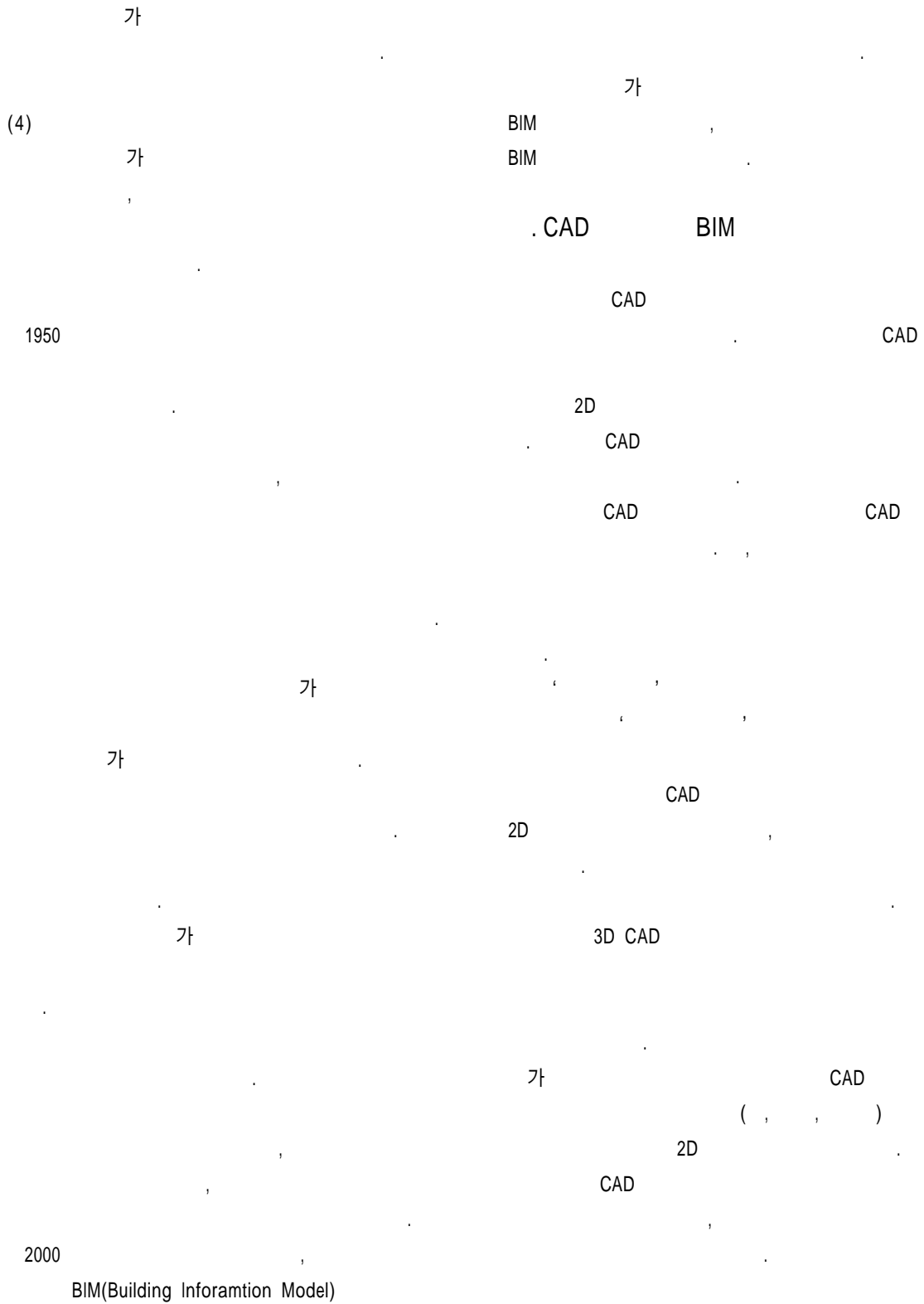
(3)

(Time-shared com-puter)

가

SMS

BIM



3D

3D CAD

8

(Fire Rating Value)

(Insulation

[ 2]

가

BIM

가  
CAD

BIM

BIM

BIM

BIM

BIM 가

CAD

가

BIM

IAI 19

가

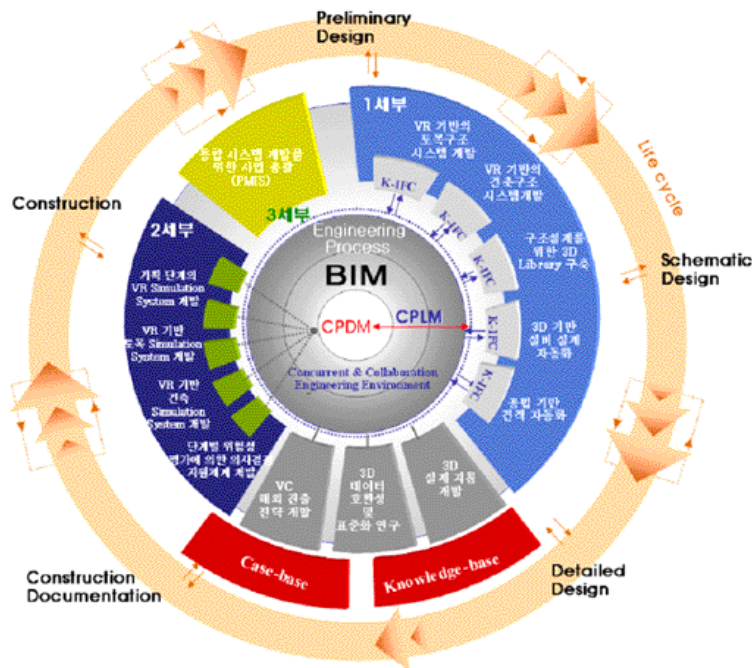
BIM

, IFC(Industry

2D

Foundation Class)

BIM



[ 2] BIM

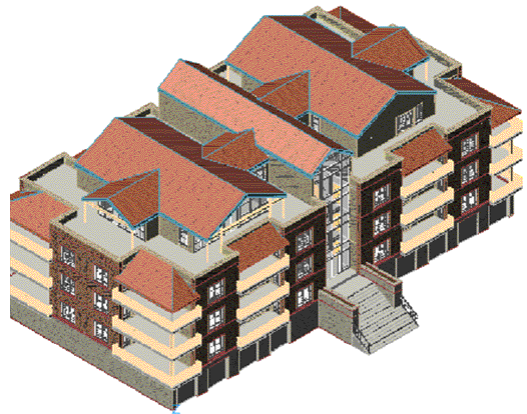
(가

(VA), 2007)

BIM

Organization) ISO(International Standards  
IFC

BIM  
BIM solution  
BIM



Autodesk社 Architectural Desktop(ADT) BIM

가 . ADT가

[ 4] ADT 3

Building model

BIM 가 ADT

BIM . ADT

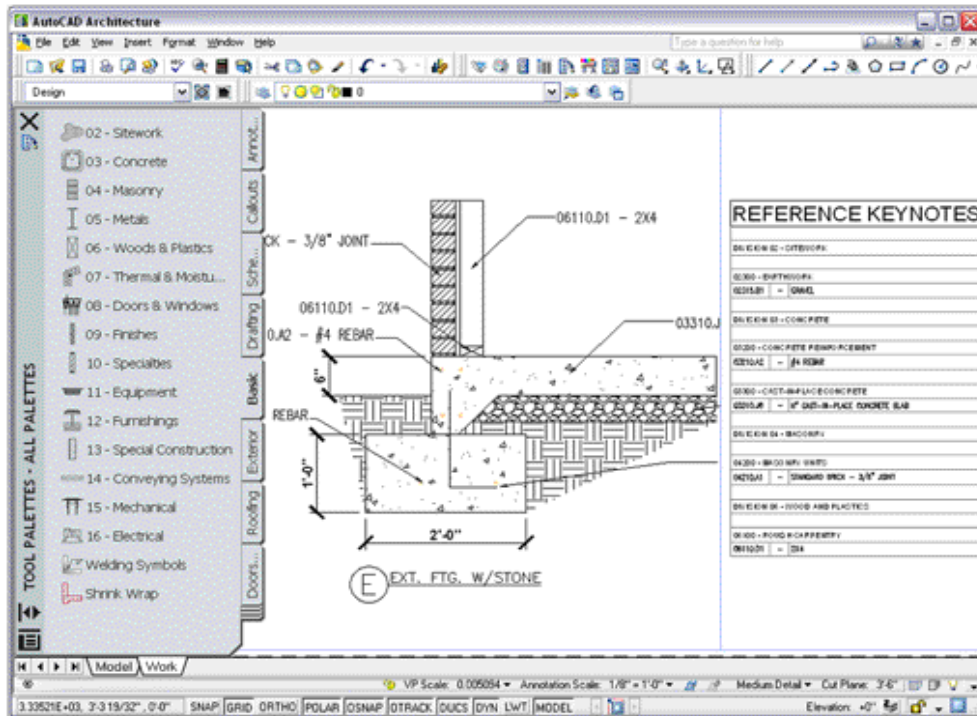
가 가 가

view

[ 3], [ 4] ADT

BIM

. ADT AutoCAD



[ 3] ADT User Interface

Autodesk社 REVIT

BIM

Bentley Structure, Bentley HVAC

BIM

REVIT

Bentley BIM

BIM

Micro

station

( , , )

CAD

REVIT

( )

( )

가

view( )

DWG IFC

[ 5] REVIT

( , , )

가 Bentley

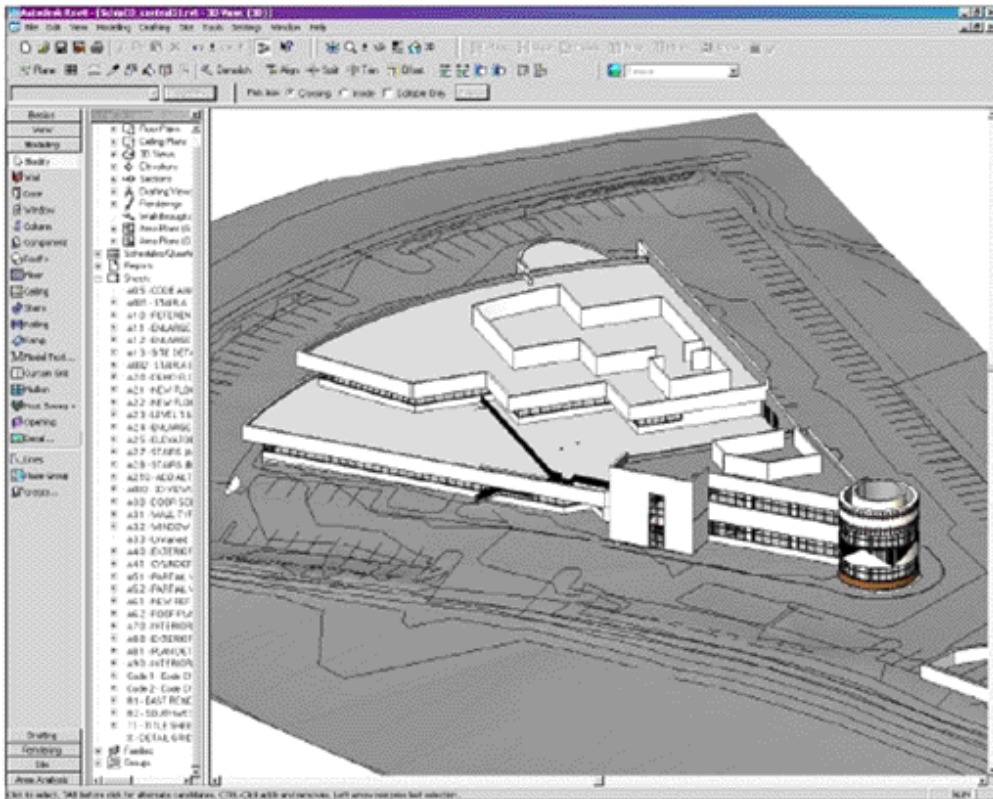
Bentley社 BIM

Bentley Architecture( station Triforma

Micro )

Graphisoft社 BIM 가

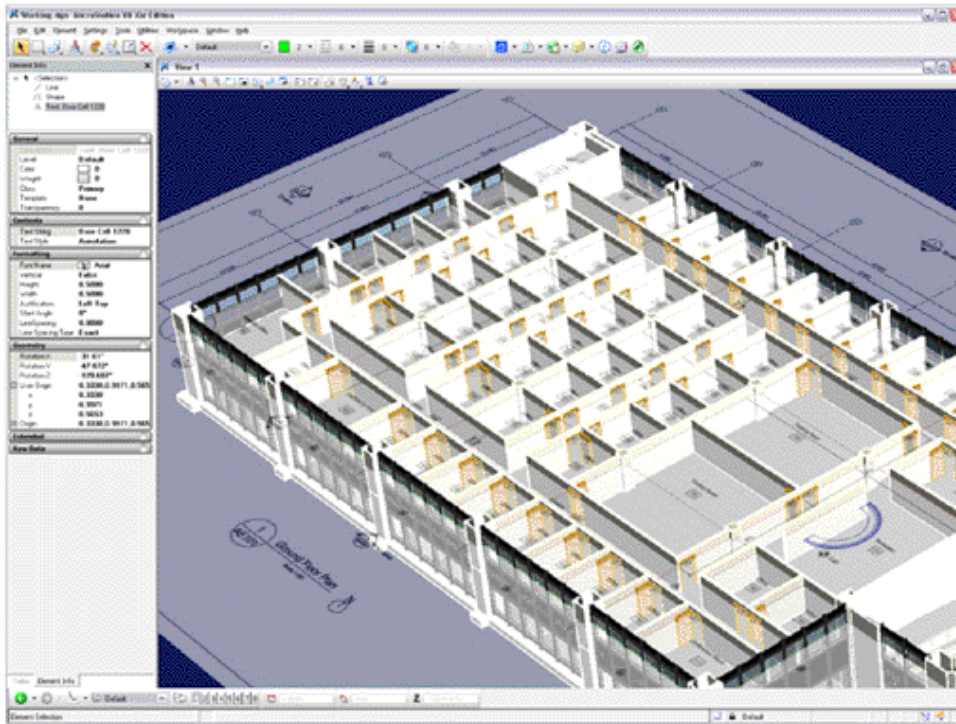
Graphisoft ArchiCAD BIM



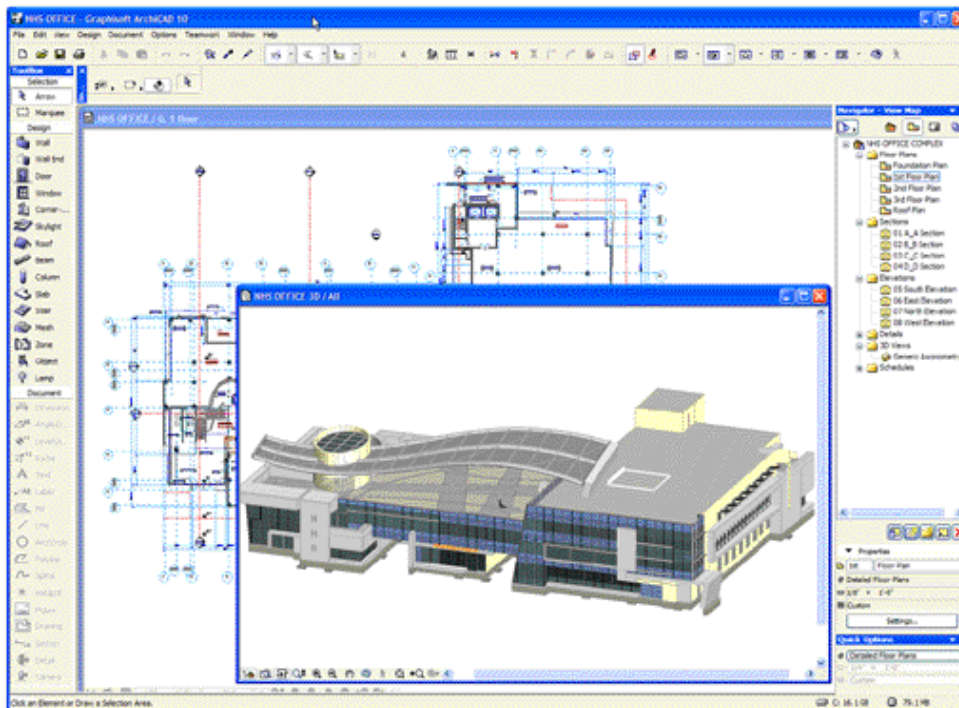
[ 5] REVIT

BIM

# BIM



[ 6] Microstation Triforma BIM

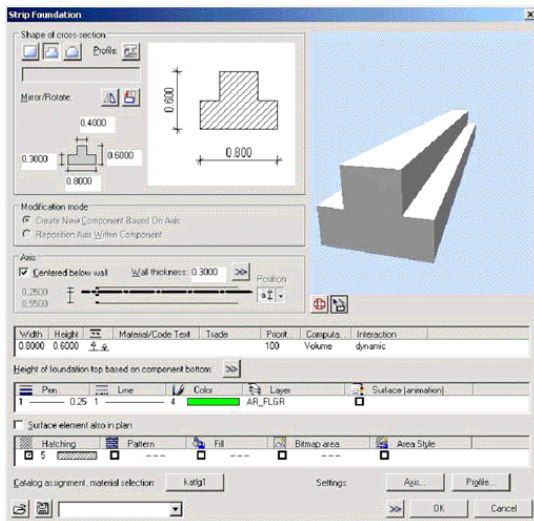


[ 7] ArchiCAD BIM

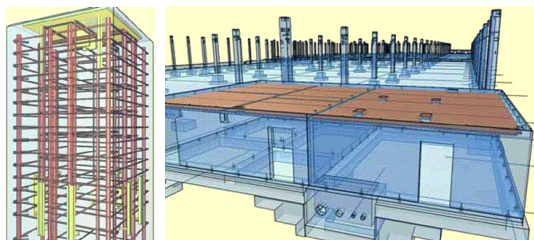
가  
 가 . 20  
 BIM Archi STEP, IFC  
 CAD , Graphisoft 가 2D  
 EPM Technology KOSDIC가  
 IFC  
 BIM 가  
 Nemetschek社 Allplan  
 NOI(Nemetschek Object Interface) ) , ISO  
 software . NOI TC184/SC4 (Industrial data)  
 IFC API STEP  
 가  
 Allplan

4.1 STEP(Standard for the Exchange of Product model data)

STEP (ISO)  
 ISO 10303(  
 ) , ISO  
 TC184/SC4 (Industrial data)  
 STEP



[ 8] Allplan User Interface



[ 9] Allplan detail

STEP PDES  
 (stands for Product Data Exchange using STEP),

가,

STEP

- level 1 :
- level 2 :
- level 3 :

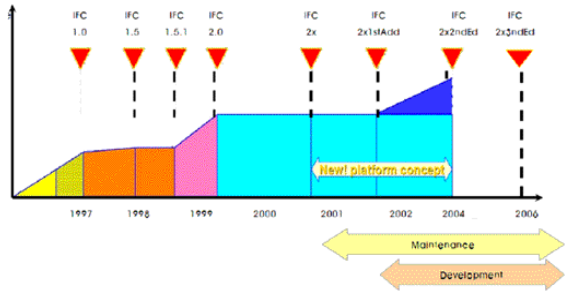
STEP

BIM

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STEP

STEP



[ 10] IFC

2가

STEP

IFC STEP

가

4 1997. 1 IFC Release 1  
IFC Release 3가  
IFC 2006. 2 IFC 2x Edition 3가  
IFC [ 10]  
IFC [ 1]

4.2 IFC(Industry Foundation Classes)

(ISO) ISO/PAS 16739

IFC 1994

IFC 2x3 STEP

FM(Facilities Management)

EXPRESS

IAI(International

EXPRESS-G

ifcXML

Alliance for Interoperability)가 / /

IFC2x3 [ 11]

[ 1] IFC

IFC Release 1.0	1997. 1	- 4 ( , , , )
IFC Release 2.0	1999. 4	- Resource layer, Core layer 가 Layer 가
IFC 2X	2000. 10	- IFC - ifcXML
IFC 2X Edition 3	2006. 2	- ISO 10303-11 Express - EXPRESS-G - IFC 가 가 - ifcXML - 가 가 - 가





BIM

가 ) 가 가  
가

CAD

가  
- BIM , 가

CAD  
KOSDIC  
(IFC) 2 CAD  
(XM-9)  
SCADEC

KOSDIC  
(IAI)  
STEP-CDS

BIM BIM

4.4

BIM

STEP,

IFC, KOSDIC

Application

Application

가

BIM

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가  
가

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가

BIM

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( , , ,

CAD

BIM

BIM 가 , Autodesk REVIT 가 , FM , , IFC , , CORENET  
Tower , Freedom Tower , JACIC( , 가 , )  
1,776ft 가 ) 가  
2600,000ft<sup>2</sup> . SOM , IAI  
REVIT 가 BIM IFC HITOS  
HUT-600 , IFC  
BIM IFC-R  
, 가 “ Digital Construction Develop-  
IAI IFC BIM ment Program ” , 2007 1 1  
(Building Information Modeling) 5,300,000  
가 IFC BIM  
NIST(2004)  
15.8 ,  
가  
가 가 BIM  
GSA(General Services Administration), NIBS(National Institute of Building Science), Coast Guard BIM  
building SMART 가  
Alliance , BIM Standards Ver 1.0  
BIM 가  
, GSA 2007 BIM  
가  
BIM  
가 BIM e-Info, e-  
Check, e-Submission CORENET - SketchUP  
1995 12  
, - Bentley Architecture, Structural  
e-Submission - STAAD Midas  
, 2007 IAI  
IFC BIM 가 IFC - Tekla Xsteel  
BIM CAD - NavisWorks

BIM

- Graphisoft Virtual Construction 4D BIM
- Codebook (Codebook BIM 가 가 )
- (DOE-2, Energy Plus 가 ) 1. 가 , 1 (3 ), “ 3
- (Timberline )
- Primavera ”, 가 , 2007.
- 2. , “
- ”,
- , 2006.
- 3. Chuck Eastman, “Building Product Model ”, CRC Press, 1999.
- 4. Ian Howell and Bob Batcheler, “ Building Information Modeling Two Years Later-Huge Potential, Some Success and Several Limitations ”
- 5. Lachmi Khemlani, “ Autodesk Revit : Implementation in practice ”, 2004.
- 6. “ Building Information Modeling in Practice ”, Autodesk, 2003.
- 7. “ Nemetschek BIM Strategy ”, Nemetschek, 2007.
- 8. “ The Building Information Model ”, Graphisoft, 2003.
- ( : 031-299-4765)