

Name	Description	Remarks
No	Number of the investigated projects	Data type: Numeric Acceptable values: Po to P78
Psize code	Project Size code	Data type: Numeric Acceptable values: 1 - below HK\$50 million 2 - HK\$50-200 million 3 - HK\$200-1000 million 4 - above HK\$1000 million
PType code	Project Type code	Data type: Numeric Acceptable values: 1 - residential 2 – commercial 3 – educational 4 - sporting 5 – hospital 6 – transportation 7 – industrial 8 – others
PNat code	Project Nature code	Data type: Numeric Acceptable values: 0 - private project 1 - public project
BOC	whether client/owner has been involved in BIM implementation in the investigated project	Data type: Numeric Acceptable values: 0 - No 1 - Yes
BOD	whether designer has been involved in BIM implementation in the investigated project	Data type: Numeric Acceptable values: 0 - No 1 - Yes
BOG	whether general contractor has been involved in BIM implementation in the investigated project	Data type: Numeric Acceptable values: 0 - No 1 - Yes
BOS	whether subcontractors has been involved in BIM implementation in the investigated project	Data type: Numeric Acceptable values: 0 - No 1 - Yes
BOT	whether BIM consultant has been involved in BIM implementation in the investigated project	Data type: Numeric Acceptable values: 0 - No 1 - Yes

BOO	whether others has been involved in BIM implementation in the investigated project	Data type: Numeric Acceptable values: 0 - No 1 - Yes
Isomorphic pressures	three variables of isomorphic pressures are included: Coercive pressures (CP), Mimetic pressures (MP), and Normative pressures (NP)	Data type: Text Acceptable values: CP1 MP1 MP2 NP1 NP2 NP3
CP1 code	Government agencies required this project to use BIM; This reflects the authoritative influences of government agencies on project BIM implementation	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree 4 – neutral 5 –slightly agree 6 - agree 7 - strongly agree
MP1 code	Peer projects in Hong Kong had benefitted greatly through using BIM	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree 4 – neutral 5 –slightly agree 6 - agree 7 - strongly agree
MP2 code	Peer projects in Hong Kong had gained good reputations in the industry through using BIM	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree 4 – neutral 5 –slightly agree 6 - agree 7 - strongly agree
NP1 code	Software vendors strongly advocated the use of BIM in this type of projects	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree

		4 – neutral 5 –slightly agree 6 - agree 7 - strongly agree
NP2 code	Industry consultants strongly advocated the use of BIM in this type of projects	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree 4 – neutral 5 –slightly agree 6 - agree 7 - strongly agree
NP3 code	Industry associations strongly propagated the value of BIM in this type of projects	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree 4 – neutral 5 –slightly agree 6 - agree 7 - strongly agree
COS	client owners support	Data type: Text Acceptable values: COS1 COS2 COS3
COS1 code	The project client had invested substantial resources in BIM use in this project	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree 4 – neutral 5 –slightly agree 6 - agree 7 - strongly agree
COS2 code	The project client regarded BIM use as a priority of project activities	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree 4 – neutral 5 –slightly agree 6 - agree

		7 - strongly agree
COS3 code	The project client had put much effort in driving project participating organizations to collaboratively use BIM	Data type: Numeric Acceptable values: 1 –strongly disagree 2 –disagree 3 – slightly disagree 4 – neutral 5 –slightly agree 6 - agree 7 - strongly agree
BA	BIM application areas that used in three main project phase: Design phase, Construction phase, and Design or construction phase	Data type: Text Acceptable values: BIA1 BIA2 BIA3 BIA4 BIA5 BIA6 BIA7 BIA8 BIA9 BIA10 BIA11 BIA12 BIA13
BIA1 code	Design Authoring area: Utilize BIM software to design and three-dimensionally (3D) represent different building systems of the project	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA2 code	Design Reviews area: Related stakeholders review BIM models to provide feedbacks and to validate related details of the proposed design	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA3 code	Existing Conditions Modelling area: Develop a 3D model of the existing site conditions with the help of laser scanning or conventional survey methods	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear

BIA4 code	Site Analysis in the Design Phase area: Utilize BIM and GIS tools to evaluate a given site to determine the optimal location, position and orientation for the project	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA5 code	Facility Energy Analysis area: Utilize BIM models and energy simulation programs to conduct energy assessments for the proposed design	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA6 code	Other Engineering Analysis area: Utilize BIM models and analytical software to assess other performance (e.g., structural safety, acoustics) of the proposed design	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA7 code	Phase Planning (4D Modelling) area: Develop 4D models based on schedule information to visualize and analyze the sequence of construction activities	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA8 code	Site Utilization Planning area: Utilize BIM models to graphically represent permanent and temporary on-site facilities to plan effective utilizations of the construction site	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA9 code	3D Control and Planning area: Utilize BIM models to create detailed control points for the layout of construction assemblies (e.g., walls) and the movement of equipment	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA10 code	Digital Fabrication area: Utilize digitized information in BIM models to facilitate the off-site fabrication of construction assemblies (e.g., walls, stairs)	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear

BIA11 code	As-Built Modelling area: Create a post-construction record model to accurately represent the physical conditions, environment, and assets of the constructed facility	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA12 code	Cost Estimation and Quantity Take-Off area: Utilize BIM models to generate accurate quantity take-offs and cost estimates	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear
BIA13 code	3D Coordination area: Utilize clash detection software to identify and coordinate field conflicts by analyzing 3D models of different building systems	Data type: Numeric Acceptable values: 0 – not used 1 – some use 2 – extensive use N - notclear