

Simplified exemplary attribute list for the paper "Building Information Modelling based Ground Modelling for Tunnel Projects – Tunnel Angath / Austria"

Attribute							Factual Data Model	Interpreted ground models					Model type
							Objects	Objects					Object name
							Borehole	GeotechModel	GeotechUnit	GeotechSynthesisModel	GeotechTypicalSection	CrossSection	
ID	PSet	Label	Description	Type	Unit	Example	IfcBuildingElementProxy	IfcBuildingElementProxy	IfcBuildingElementProxy	IfcBuildingElementProxy	IfcBuildingElementProxy	IfcBuildingElementProxy	Ifc class
1	Borehole	Name	Name of the borehole	String	[-]	A-KB 01/21	x						
2	Borehole	DrillingStart	Date of start of drilling	String	[-]	20.12.2020	x						
3	Borehole	DrillingEnd	Date of end of drilling	String	[-]	20.12.2020	x						
4	Borehole	DrillingCompany	Construction company of the borehole	String	[-]	ExampleComp	x						
5	Borehole	WellType	Information on how the well was equipped after construction	String	[-]	refilled, monitoring well	x						
6	Borehole	MaxWaterHeightAbsolute	Maximum height of water during observation	Real	[m]	123.85	x						
7	Borehole	MaxWaterHeightDate	Date when maximum water height was measured	String	[-]	20.12.2020	x						
8	Borehole	MinWaterHeightAbsolute	Minimum height of water during observation	Real	[m]	121.32	x						
9	Borehole	MinWaterHeightDate	Date when minimum water height was measured	String	[-]	20.12.2020	x						
10	Borehole	ObservationPeriodStart	Date when groundwater observation started	String	[-]	20.12.2020	x						
11	Borehole	ObservationPeriodEnd	Date when groundwater observation ended	String	[-]	20.12.2020	x						
12	Borehole	DrilllogRel	Relative link to the drilling log pdf	String	[-]	\\Linked_Drill_Logs\\Drill_Log_A\\Profile_A.pdf	x						
13	GeotechUnits	GeotechUnit_1	Name of the rockmass type	String	[-]	1			x		x		
14	GeotechUnits	GeotechUnit_1_Percent	Percentage of the rockmass type within GeotechUnit	Real	[%]	35			x		x		
15	GeotechUnits	GeotechUnit_1_Description	Short description of rockmass type	String	[-]	Marl of the Unterangerberg Formation, fresh to slightly weathered			x		x		
16	GeotechUnits	GeotechUnit_1_Parameter	Relative link to the rockmass type data sheet	String	[-]	\\Linked_Data_Sheet\\Rockmass_1.pdf			x		x		
17	GeotechUnits	GeotechUnit_2	Name of the rockmass type	String	[-]	1			x		x		
18	GeotechUnits	GeotechUnit_2_Percent	Percentage of the rockmass type within GeotechUnit	Real	[%]	25			x		x		
19	GeotechUnits	GeotechUnit_2_Description	Short description of rockmass type	String	[-]	Marl of the Unterangerberg Formation, fresh to slightly weathered			x		x		
20	GeotechUnits	GeotechUnit_2_Parameter	Relative link to the rockmass type data sheet	String	[-]	\\Linked_Data_Sheet\\Rockmass_1.pdf			x		x		
21	GeotechUnits	GeotechUnit_3	Name of the rockmass type	String	[-]	1			x		x		
22	GeotechUnits	GeotechUnit_3_Percent	Percentage of the rockmass type within GeotechUnit	Real	[%]	5			x		x		
23	GeotechUnits	GeotechUnit_3_Description	Short description of rockmass type	String	[-]	Marl of the Unterangerberg Formation, fresh to slightly weathered			x		x		
24	GeotechUnits	GeotechUnit_3_Parameter	Relative link to the rockmass type data sheet	String	[-]	\\Linked_Data_Sheet\\Rockmass_1.pdf			x		x		
25	GeotechUnits	GeotechUnit_4	Name of the rockmass type	String	[-]	1			x		x		
26	GeotechUnits	GeotechUnit_4_Percent	Percentage of the rockmass type within GeotechUnit	Real	[%]	20			x		x		
27	GeotechUnits	GeotechUnit_4_Description	Short description of rockmass type	String	[-]	Marl of the Unterangerberg Formation, fresh to slightly weathered			x		x		
28	GeotechUnits	GeotechUnit_4_Parameter	Relative link to the rockmass type data sheet	String	[-]	\\Linked_Data_Sheet\\Rockmass_1.pdf			x		x		
29	GeotechUnits	GeotechUnit_5	Name of the rockmass type	String	[-]	1			x		x		
30	GeotechUnits	GeotechUnit_5_Percent	Percentage of the rockmass type within GeotechUnit	Real	[%]	15			x		x		
31	GeotechUnits	GeotechUnit_5_Description	Short description of rockmass type	String	[-]	Marl of the Unterangerberg Formation, fresh to slightly weathered			x		x		
32	GeotechUnits	GeotechUnit_5_Parameter	Relative link to the rockmass type data sheet	String	[-]	\\Linked_Data_Sheet\\Rockmass_1.pdf			x		x		
33	GeologyGeneral	GeologicalUnits	Expected geological units in GeotechUnit	String	[-]	Unterangerberg Formation			x		x		
34	Semantics_General	TunnelmeterStart	Start of GeotechTypicalSection with respect to the tunnellength	Real	[m]	1.234					x		
35	Semantics_General	TunnelmeterEnd	End of GeotechTypicalSection with respect to the tunnellength	Real	[m]	1.345					x		
36	Phenomena	OccurenceGas	Likelihood of the occurrence of natural gases	String	[-]	possible, probable...					x		
37	Phenomena	OccurenceSwelling	Likelihood of the occurrence of swelling rockmass	String	[-]	possible, probable...					x		
38	Water	AquiferType	Type of groundwater aquifer	String	[-]	porous aquifer					x		
39	Water	WateringressLikely	Likely bandwidth of water ingress during excavation	String	[l/s]	1-5 l/s					x		
40	Water	WateringressPossible	Possible bandwidth of water ingress during excavation	String	[l/s]	1-5 l/s					x		
41	Water	WaterPressure	Expected maximum water pressure	Real	[bar]	7					x		
42	Discontinuities	D1_Type	Type of main discontinuity set	String	[-]	bedding, joints, faults					x		
43	Discontinuities	D1_DipDir	Principal dip direction of main discontinuity set	Real	[°]	245					x		
44	Discontinuities	D1_Dip	Principal dip of main discontinuity set	Real	[°]	65					x		
45	Discontinuities	D2_Type	Type of second discontinuity set	String	[-]	bedding, joints, faults					x		
46	Discontinuities	D2_DipDir	Principal dip direction of second discontinuity set	Real	[°]	245					x		
47	Discontinuities	D2_Dip	Principal dip of second discontinuity set	Real	[°]	65					x		
48	Discontinuities	D3_Type	Type of other discontinuity set	String	[-]	bedding, joints, faults					x		
49	Discontinuities	D3_DipDir	Principal dip direction of other discontinuity set	Real	[°]	245					x		
50	Discontinuities	D3_Dip	Principal dip of other discontinuity set	Real	[°]	65					x		
51	CrossSection	CrossSectionName	Name of the cross section	String	[-]	Crossection 1						x	
52	CrossSection	CrossSectionRel	Relative link to cross section pdf	String	[-]	\\Linked_Cross_Sections\\Cross_Section_1.pdf						x	