BIM Execution Plan

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BIM execution plan

- **BS EN ISO 19650-2:2018:**
  - Plan that explains how the information management aspects of the appointment will be carried out by the delivery team

" e) any proposed additions or amendments to the project's information production methods and procedures that the delivery team require to facilitate the effective:

— capture of existing asset information,

— generation, review, approval and authorization of information,

— security and distribution of information, and

— delivery of information to the appointing party;

f) any proposed additions or amendments to the project's information standard that the delivery team require to facilitate the effective:

— exchange of information between task teams,

— distribution of information to external parties, or

— delivery of information to the appointing party;

*g) a proposed schedule of software (including versions), hardware and IT infrastructure the delivery team intend to adopt. "**

What is BEP?

- Creates a common language among stakeholders.
  - Describes the BIM Scope, BIM Uses.
  - It sets standards for modeling in line with BIM uses. (E.g., LOD)
- Enables effective communication / collaboration among disciplines.
  - Identifies collaboration procedures among all stakeholders.
- It is not a BIM training guide.
  - Training and model usage details can be added as an additional document to the BEP.
- Defines how to produce and manage a BIM model.
  - Defines process flow diagrams of BIM uses.
- Define the infrastructure that supports the BIM application.
  - Information Exchange,
  - Common Data Environment,
  - Data Segregation

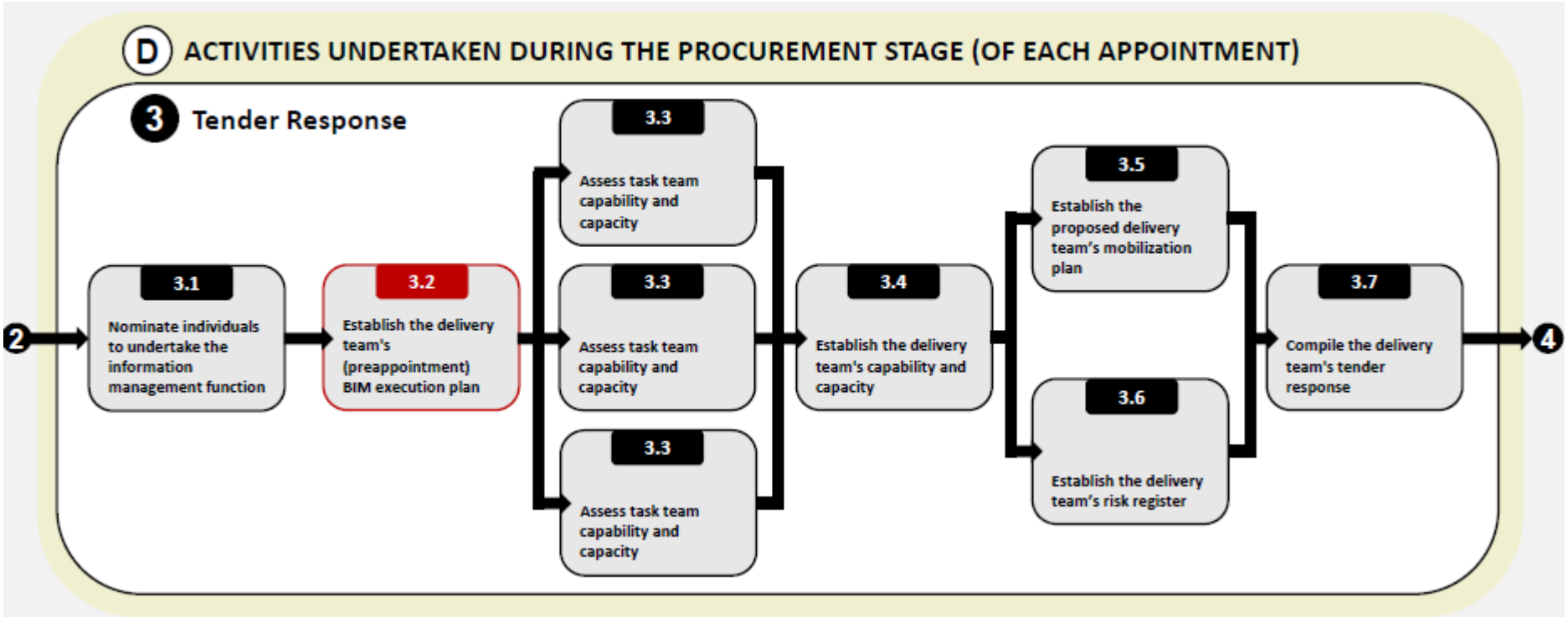
What is BEP?

- Project phases are described and associated with the schedule.
- The document ID must be revised accordingly.
- All parties must use the latest revision.

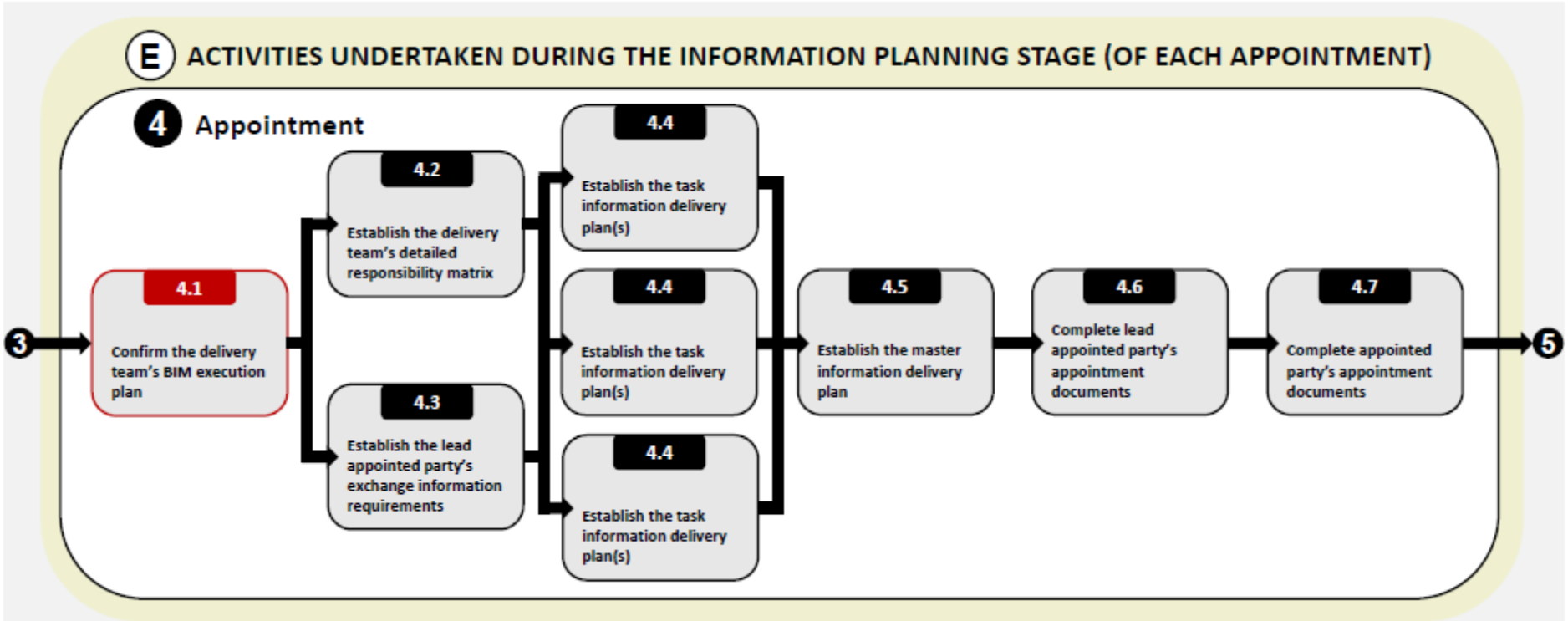
REVISION HISTORY

REV	Date	Description	Status
P1	07 May 2015	Draft - Issued for Review	For Review
P2	15 May 2015	Draft - Issued for Review	For Review
P3	12 June 2015	Issued for Information	For Information
P4	24 June 2015	Issued for Information	For Information
P5	08 July 2015	Issued for Information	For Information

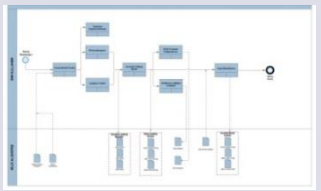
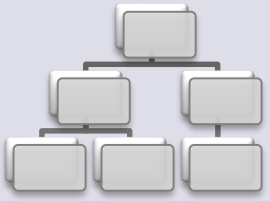
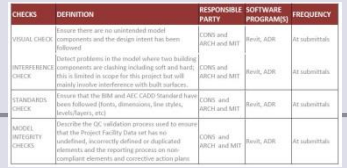
How BEP is defined?



How BEP is defined?



BEP Process

Vision and goals	Define vision and goals of the project	
BIM uses	Define how BIM is going to be used.	
Process	Define process flows of organizational processes	
Information	Define operational information requirements	
Infrastructure	Define operational infrastructure needs (software, hardware, digital communication)	
Personnel	Define personnel needs	
Quality control	Visual check, clash check, element consistency check	

BEP Content

- Main headings:
  - Description of BIM Execution Plan
    - The goal, in which processes to use in the project, which source / template is used.
  - Project Information
  - Project Goals
  - Roles and Responsibilities
  - BIM Processes
  - BIM Information Exchange
  - Model Structure
  - Common Data Environment (CDE)
  - Data Segregation / Federation strategy
  - Collaboration Procedures
  - Quality Control
  - Technical Infrastructure Requirement
  - Project Origin Point and Coordinates

Project Information

SECTION B: PROJECT INFORMATION

This section defines basic project reference information and determined project milestones.

1. **PROJECT OWNER:**
2. **PROJECT NAME:**
3. **PROJECT LOCATION AND ADDRESS:**
4. **CONTRACT TYPE / DELIVERY METHOD:**
5. **BRIEF PROJECT DESCRIPTION:** [NUMBER OF FACILITIES, GENERAL SIZE, ETC]
6. **ADDITIONAL PROJECT INFORMATION:** [UNIQUE BIM PROJECT CHARACTERISTICS AND REQUIREMENTS]
7. **PROJECT NUMBERS:**

PROJECT INFORMATION	NUMBER
CONTRACT NUMBER:	
TASK ORDER:	
PROJECT NUMBER:	

8. **PROJECT SCHEDULE / PHASES / MILESTONES:**
Include BIM milestones, pre-design activities, major design reviews, stakeholder reviews, and any other major events which occur during the project lifecycle.

PROJECT PHASE / MILESTONE	ESTIMATED START DATE	ESTIMATED COMPLETION DATE	PROJECT STAKEHOLDERS INVOLVED
PRELIMINARY PLANNING			
DESIGN DOCUMENTS			
CONSTRUCTION DOCUMENTS			
CONSTRUCTION			

BÖLÜM B: PROJE BİLGİLERİ

PROJE ADI

İDARE

PROJE YÖNETİMİ

YÜKLENİCİ

YAPI DENETİM GÖREVLİSİ

PROJE MÜELLİFLERİ

PROJENİN YERİ VE ADRESİ

PROJE TANIMI

Project goals

Priority level (1-3)	Goal	Uses
3	Determine reciprocal conflicts after comparison of 3D-discipline models. Eliminate conflicts prior to construction.	**3D Coordination Visualization**
3	Making virtual mock-ups, for instance creating highly detailed model of a small portion of the project to analyse alternatives and solve constructability issues	**Design Reviews**
3	Volume determination	**Quantity take-off**
3	Drawings to originate from a 3D environment. Relevant information extracted from 3D models to be used in reports.	**Drawings & Reports**

ÖNCELİK	HEDEF AÇIKLAMASI	POTANSİYEL BIM KULLANIMI
Yüksek	3 Boyutlu Koordinasyon	Çakışma Kontrolü
Yüksek	2B Shop Drawing üretimi	Uygulama Projesi oluşturulması
Orta	Kayıt Modellemesi	As - Built Bilgilerine göre Modelin Güncellenmesi
Orta	Faz Planlama (4B)	İş Programı Model Entegrasyonu
Düşük	Model Tabanlı Maliyet Tahmini (5B)	BIM BoQ (MTO & QTO)
Düşük	İşletme ve Bakım (7B)	İşletme süreçlerinde kullanılmaya uygun model oluşturulması

BIM KULLANIMLARI

TASARIM EKİPLERİ	İNŞAAT EKİPLERİ	İŞLETME EKİPLERİ
Modelin Oluşturulması	Modelin Kontrolü	İşletme ile İlgili Parametrelerin Kurgulanması
Modelin Kontrolü	Faz Planlama (4B)	İşletme ile İlgili Parametrelerin Girilmesi
3 Boyutlu Koordinasyon	Maliyet Kontrolü (5B)	
Maliyet Tahmini (5B)	Kayıt Modellemesi	
Kayıt Modellemesi		

BIM Uses

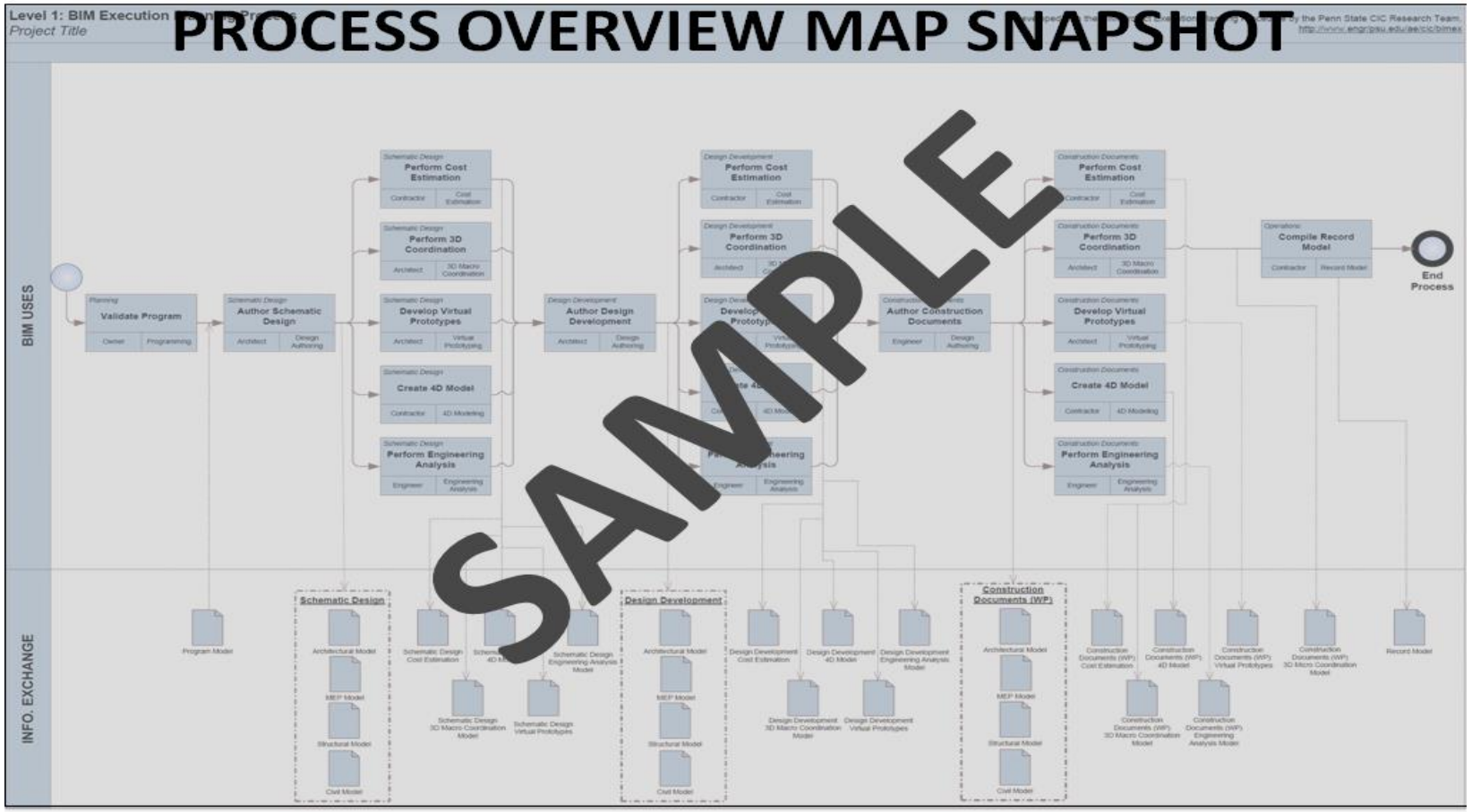
X	PLAN	X	DESIGN	X	CONSTRUCT	X	OPERATE
	PROGRAMMING		DESIGN AUTHORING		SITE UTILIZATION PLANNING		BUILDING MAINTENANCE SCHEDULING
	SITE ANALYSIS		DESIGN REVIEWS		CONSTRUCTION SYSTEM DESIGN		BUILDING SYSTEM ANALYSIS
			3D COORDINATION		3D COORDINATION		ASSET MANAGEMENT
			STRUCTURAL ANALYSIS		DIGITAL FABRICATION		SPACE MANAGEMENT / TRACKING
			LIGHTING ANALYSIS		3D CONTROL AND PLANNING		DISASTER PLANNING
			ENERGY ANALYSIS		RECORD MODELING		RECORD MODELING
			MECHANICAL ANALYSIS				
			OTHER ENG. ANALYSIS				
			SUSTAINABLITY (LEED) EVALUATION				
			CODE VALIDATION				
	PHASE PLANNING (4D MODELING)		PHASE PLANNING (4D MODELING)		PHASE PLANNING (4D MODELING)		PHASE PLANNING (4D MODELING)
	COST ESTIMATION		COST ESTIMATION		COST ESTIMATION		COST ESTIMATION
	EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING		EXISTING CONDITIONS MODELING

Roles and Responsibilities

ROLE	ORGANIZATION	CONTACT NAME	LOCATION	E-MAIL	PHONE
Project Manager(s)					
BIM Manager(s)					
Discipline Leads					
Other Project Roles					

POZİSYON	İSİM	ORG.
Proje Müdürü		
BIM Yöneticisi		
BIM Danışmanı		
Yüklenici BIM Uzmanı		
Mekanik BIM Uzmanı		
Elektrik BIM Uzmanı		
Pozisyon - 7		
Pozisyon - 8		

Process Definition



Information Exchange Matrix

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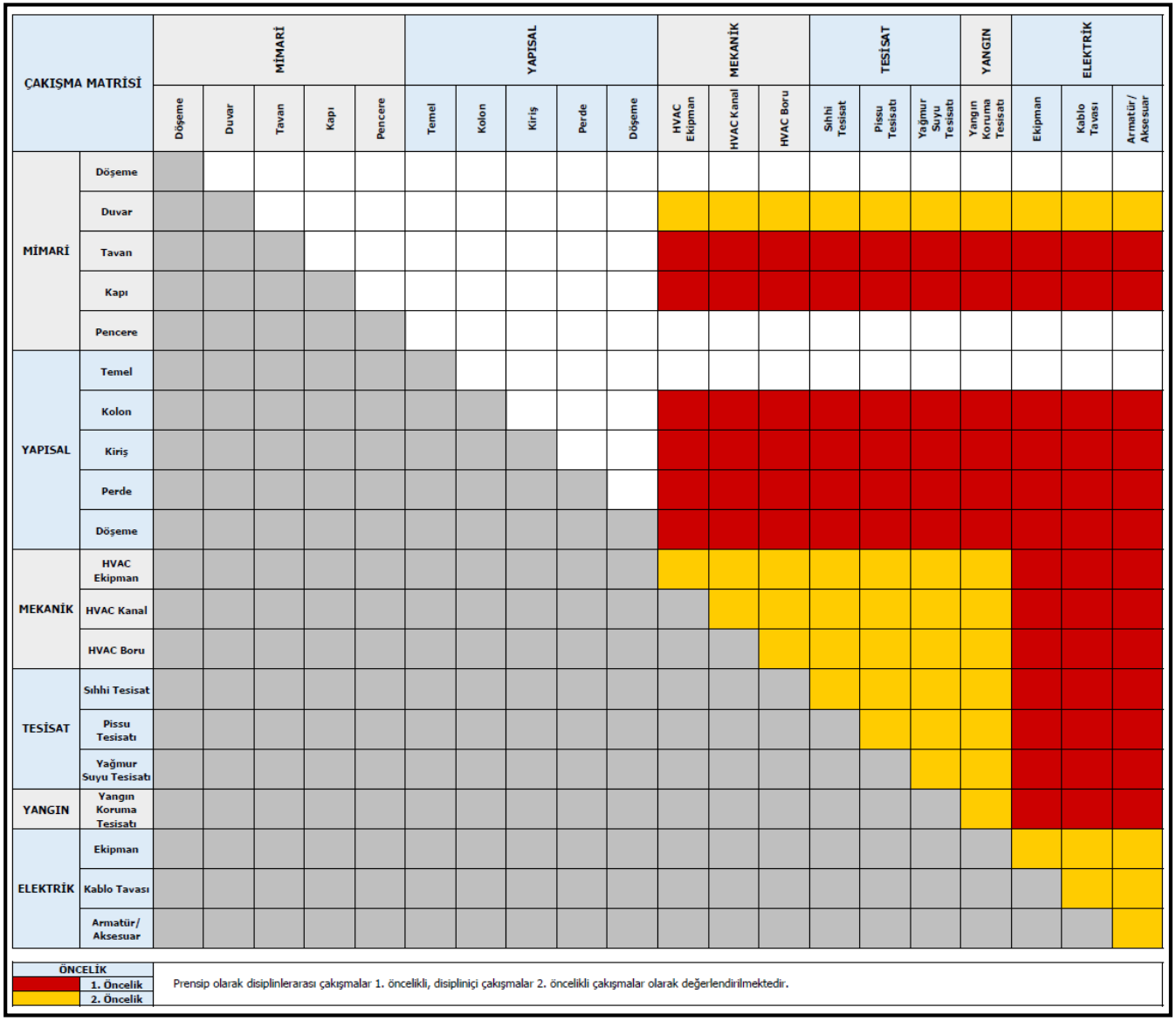
BIM SORUMLULUK MATRİSİ									
	PHASE / PROCESS DEFINITION	EMPLOYER	CONTRACTOR	BIM CONSULTANT	BIM MANAGEMENT TEAM	LEAD DESIGNER	DISCIPLINE DESIGNER	SUB-CONTRACTORS	NOTES
TASARIM ÖNCESİ	Phase 1	X	X						
	Phase 2					X	X		
	Phase 3					X	X		
	Phase 4	X	X						
	Phase …					X	X		
KAVRAMSAL TASARIM	Phase 1				/	X	X		
	Phase 2				/	X	X		
	Phase 3					X	X		
	Phase 4				X				
	Phase 5				X	X	X		
	Phase 6				/	X	X		
	Phase…	X	X						
TASARIM GELİŞTİRME	Phase 1		X	X	X	X			
	Phase 2					X	X		
	Phase 3				X				
	Phase 4		X						
	Phase 5					X	X		
	Phase …				X				
SON TASARIM	Phase 1					X	X		
	Phase 2					X	X		
	Phase 3			X	/	X	X		
	Phase 4	X	X						
	Phase …		X						
YAPIM	Phase 1				/	X	X		
	Phase 2		X	X					
	Phase 3		X						
	Phase …				/	X	X		
TESİS YÖNETİMİ	Phase 1		X						
	Phase 2							X	
	Phase 3							X	
	Phase 4					X	X		
	Phase …							X	


ÇAKIŞMA MATRİSİ
MİMARİ
YAPISAL
MEKANİK
TESİSAT
YANGIN
ELEKTRİK
Döşeme
Duvar
Tavan
Kapı
Pencere
Temel
Kolon
Kiriş
Perde
Döşeme
HVAC Ekipman
HVAC Kanal
HVAC Boru
Sıhhi Tesisat
Pissu Tesisatı
Yağmur Suyu Tesisatı
Yangın Koruma Tesisatı
Ekipman
Kablo Tavası
Armatür / Aksesuar
MİMARİ
YAPISAL
MEKANİK
TESİSAT
YANGIN
ELEKTRİK
Döşeme
Duvar
Tavan
Kapı
Pencere
Temel
Kolon
Kiriş
Perde
Döşeme
HVAC Ekipman
HVAC Kanal
HVAC Boru
Sıhhi Tesisat
Pissu Tesisatı
Yağmur Suyu Tesisatı
Yangın Koruma Tesisatı
Ekipman
Kablo Tavası
Armatür / Aksesuar
ÖNCELİK
1. Öncelik
2. Öncelik
Prensip olarak disiplinlerarası çakışmalar 1. öncelikli, disipliniçi çakışmalar 2. öncelikli çakışmalar olarak değerlendirilmektedir.

Model element authorship

İTÜ

Element	Architecture (CI)	Structure (CI)	MEP
Grids	Owner	Link	Link
Levels	Owner	Link	Link
Columns	Owner	Link	Link
Floors	Owner	Link	Link
Stairs	Owner	Link	Link
Structural Walls/Columns/Slabs	Link	Owner	Link
Interior Walls	Owner	Link	Link
Beams & Footings	Link	Owner	Link
Air Terminals	Link	Link	Owner
Mechanical Equipment	Link	Link	Owner
Lighting Fixtures	Link	Link	Owner
Power & Data Devices	Link	Link	Owner
Plumbing Fixtures	Owner	Link	Copy/Monitor
Sprinklers	Link	Link	Owner
Landscape	Owner	Link	Link

Model Structure -1
Naming Convention (According to BS1192:2007)

Field 1: **Project**

An abbreviated code or number identifying the project.

Field 2: **Originator Code** *(Recommended 3 characters)*

An abbreviated code identifying the originating stakeholder.

Field 3: **Zone/System** *(Recommended 2 characters)*

Identifier of which building, area, phase or zone of the project the model f relates to if the project is sub-divided by zones).

Field 4: **Level** *(Recommended 2 characters)*

Identifier of which level, or group of levels, the model file relates to if the project is sub-divided by levels.

Field 5: **Type** *(Recommended 2 characters)*

Document type, which will be **M3** for 3D model files.

Field 6: **Role** *(Recommended 2 characters)*

2 character discipline identifier code. Refer to Appendix 11.1.

Field 7: **Description**

Descriptive field to define the type of data portrayed in the file. Avoid repeating information codified in other fields. Can be used to describe any part of the previous fields, or to further clarify any other aspect of the contained data.

Full BS1192 Examples:

Model File Name	Description
FTR-ACM-XX-XX-M3-S-School_Stage_E.rvt	Acme structures model for School project at Stage E – no zones or segregation of floors.
102-ACM-Z1-XX-M3-ME-School.dgn	Acme Building Services model for job 102, Zone 1 all levels.
37232-AAA-Z6-01-M3-S-Main_Model-LOCAL.rvt	Job No. 37232, Structural model of Zone 6, Level 1. Revit User local file.

Abbreviated Examples:

Model File Name	Description
1234-01-M3-A-Partition.dgn	Job No. 1234, Architectural partition model of Level 1. No zones.
862-B1-XX-M3-W-Coordination.nwd	Contactor's full coordination model for project 862, Building B1.

Model Structure -1
Naming Convention – Another example

SECTION L: MODEL STRUCTURE

1. **File Naming Structure:**
   Determine and list the structure for model file names.

FILE NAMES FOR MODELS SHOULD BE FORMATTED AS:	
DISCIPLINE - PROJECT NUMBER – BUILDING NUMBER.XYZ (example: ARCH-11111-BL001.xyz)	
ARCHITECTURAL MODEL	ARCH-
CIVIL MODEL	CIVIL-
MECHANICAL MODEL	MECH-
PLUMBING MODEL	PLUMB-
ELECTRICAL MODEL	ELEC-
STRUCTURAL MODEL	STRUCT-
ENERGY MODEL	ENERGY-
CONSTRUCTION MODEL	CONST-
COORDINATION MODEL	COORD-

Model Structure -2 Naming families

Field 1: **Role** *(Optional)*

Identifies the owner of the object. Normally this would be omitted as objects are generic; ownership is inferred by file/layer containing the object.

Field 2: **Classification**

Uniclass code to classify the object. This is positioned at the start of the name to allow easier listing of all specific object types. e.g. all furniture regardless of manufacturer.

Note: where the classification is applied as a property of an object, it can be omitted from the object name. However, the ability to search and organise objects should be carefully considered before dropping this field. The classification must be included in either the object name or its metadata.

Field 3: **Description**

CamelCase description based on Uniclass/AEC descriptions e.g. ExternalFinishCladdingConcrete.

Field 4: **Originator/Manufacturer** *(Optional)*

Used if a proprietary object is required to represent specific manufacturer.

Field 5: **Size / Originator item code** *(Optional)*

Used to further define the object type by specifying dimensions or the manufacturer's item code. The latter can be used to help link objects directly to a specification, brochure or procurement.

Field 6: **Type**

This field uses a code to describe the intended "view" of the object. Basic codes to use are:

M3	3D model
E	2D elevation
P	2D plan
R	2D reflected ceiling
S	2D section

Field 7: **Grade / Level of detail**

Specifies the intended graphical scale and how much detail is contained in the object (e.g. 1:100, 1:20).

G0	Symbolic (not representative of the physical object) This might be used for electrical symbols or an object which is modelled the same regardless of scale
G1	Low resolution conceptual placeholder (e.g. 1:500, 1:200)
G2	Medium resolution detailed component for design/construction (e.g. 1:100, 1:50 max)
G3	High resolution, fully detailed object. Typically only used for visualisation.

Examples:

Object File Name	Description
G25-WallBrick-102.5-M3-G2	Brick wall, 102.5mm wide, 3-dimensional, grade suitable for up to 1:50 models (e.g. no brick bond defined or wall ties)
DoorInternal-M3-G1	Generic internal door, not specifically sized, 3-dimensional, grade for schematic modelling purposes of ~1:200. Classification included as a property of the object.
G322-DoorInternal-826-P-G2	Internal door of 826mm wide, intended for plan use at up to 1:50 scale.
Premdor-63990-838x1981x35-M3-G3	Internal door made by Primdor, model reference 63990 (838 x 1981 x 35mm), 3-dimensional, fully detailed with ironmongery. Classification included as a property of the object.
S-G2613-B01-Westok-1160x267x134CUB-M3-G2	Structural owned steel beam, described as a "B01" (structural engineering naming for a beam type 1), made by Westok, with a section size of 1160 x 267 x 134 CUB, 3-dimensional, grade suitable for 1:50 models.
E-G6432-PowerOutlet-P-G0	Electrical symbol representing a plug socket, intended for plan use.

Model Structure -3 Naming Views

Field 1: **Level** *(Optional)*

Concise description of the content and purpose of the view

Field 2: **Content**

Where appropriate, further clarification of the location of information shown

Examples:

Name	Description
01-Plan	First floor plan
01-CeilingPlan	First floor reflected ceiling plan
Level3-DetailPlanElevator1	Third floor detail plan at elevator 1
AA	Section A-A along gridline 4
BB	Section B-B along gridline 7
NS-BuildingSection	North-South full building section
EdgeSection	Typical edge section showing slab, beam and wall
SouthElevation	South Elevation

File naming

Discipline Codes BS1192:2007 codes shown in **bold** Additions shown feint	
A	**Architects**
B	**Building surveyors**
C	**Civil engineers**
CB	Bridge engineers
CR	Road / highway engineers
CW	Water / dam engineers
D	**Drainage**
E	**Electrical engineers**
EC	Cable Containment
EF	Fire Alarms
EL	Lighting
EP	Protection
ES	Security
F	**Facilities Manager**
G	**GIS, land surveyors**
GA	Aerial surveyors
H	**Heating and Ventilation**
I	**Interior designers**
K	**Client**
L	**Landscape architects**
M	**Mechanical engineers**
ME	Combined Services
MW	Chilled Water
MH	Heating
MV	Ventilation
P	**Public health**
PD	Drainage
PF	Fire Services
PH	Public Health Services
PS	Sanitation and Rainwater
PW	Water Services
Q	**Quantity surveyors**
R	Rail
RS	Railways signaling
RT	Railways track
S	Structural engineers
SF	Façade engineers
SR	Reinforcement detailers
T	**Town & country planners**

Project Zone Code Examples	
01	Building or zone 1
ZA	Zone A
B1	Building 1
CP	Car park
A2	Area Designation 2

Project Level Code Examples	
RF	Roof
01	Level 1
00	Ground floor
B2	Basement 2
M1	Mezzanine 1
PL	Piling
FN	Foundation

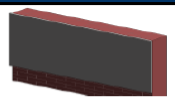
Discipline Codes cont…	
W	**Contractors**
X	**Sub-contractors**
Y	**Specialist designers**
YA	Acoustic engineers
YE	Environmental engineers
YF	Fire engineers
YL	Lighting engineers (non-building services)
Z	**General (non-specific)**

Sample folder structure

- ***[Project Folder]***	
- BIM	[BIM data repository]
- **01-WIP**	**[WIP data repository]**
- CAD	[CAD files (incl. 'Modified')]
- BIM	[Design models (incl. 'Modified')]
- SheetFiles	[Sheet/dwg files]
- Export	[Export data e.g. gbXML or images]
- Families	[Components created during this project]
- WIP_TSA	[WIP Temporary Shared Area (TSA)]
- **02-Shared**	**[Verified Shared data]**
- CAD	[CAD data/output files]
- BIM	[Design models]
- CoordModels	[Compilation models]
- **03-Published**	***[Published Data]***
+ YYYYMMDD-Description	[Sample submission folder]
+ YYYYMMDD-Description	[Sample submission folder]
- **04-Archived**	**[Archived Data repository]**
+ YYMMDD-Description	[Archive folder]
+ YYMMDD-Description	[Archive folder]
- **05-Incoming**	**[Incoming Data repository]**
- Source	[Data originator]
+ YYYYMMDD-Description	[Incoming folder]
+ Source	[Data originator]
- **06-Resource**	**[Project BIM Resources Library]**
+ Titleblocks	[Drawing borders/titleblocks]
+ Logos	[Project logos]
+ Standards	[Project standards]

Model content

- Determining the LOD levels of the model elements for each discipline at different stages of the project.
- Preparation of LOD tables.
- Determination of the elements that will be modeled and not modeled for each discipline in various stages of the project.

Finished Wall	BIM Object or Element	
	Item Catergory - Finished Wall	
	Description: A 2D and 3D element.	
Model Definition	**Information Category**	**Information Item**
A - Precise Geometry		
Accurate Size & Location, include materials and object parameters	Physical Properties of BIM Objects & Elements	Height
	Physical Properties of BIM Objects & Elements	Width
	Physical Properties of BIM Objects & Elements	Lenght
	Physical Properties of BIM Objects & Elements	Area
	Physical Properties of BIM Objects & Elements	Volume
	Location of Objects & Elements	Level Name
	Location of Objects & Elements	Level ID
	Annotation Properties	Type ID
	Quantification Properties	BOQ Reference No
	Quantification Properties	WBS Number
FAMILY TYPES		
1	PLASTER CEMENT	
2	PLASTER CEMENT, PAINT	
3	GRANITE CERAMIC	
4	STAINLESS STEEL	

Common data environment (CDE)

- **Common data environment:**
  - A platform where information from the whole project team is gathered at a single point.
  - Used to collect BIM models from the project team and manage and share project documents
  - Ensures the cooperation of the project members and prevents the creation of the same information twice.
    - Project server, extranet or other tool (Acconex, Vault, ProjectWise)

12 Common data environment (CDE) solution and workflow (ISO 19650)

12.1 Principles

- *A CDE solution and workflow should be used for managing information during asset management and project delivery. During the delivery phase, the CDE solution and workflow support the information management processes in ISO 19650-2:2018, 5.6 and 5.7.*

- *At the end of a project, information containers required for asset management should be moved from the PIM to the AIM. Remaining project information containers, including any in the archive state, should be retained as read-only in case of dispute and to help lessons to be learned. The timescale for retaining project information containers should be defined in the EIR.*

- *The current revision of each information container within the CDE should be in one of the following three states:*

  - *Work in progress (see 12.2);*
  - *Shared (see 12.4); or*
  - *Published (see 12.6).*"

Common data environment (CDE)

- The owner of the document in the CDE is the person who created the document.
  - Federated model: combination of the models created by different people, teams and disciplines
    - In this combination, ownership status does not change.
    - The situation may be a bit more complex when the model owner changes in later stages of the project:
    - When the objects used in the design are replaced by detailed objects of the sub-contractor to be used during construction
  - CIC BIM protocol: The employer assigns an information manager to provide a CDE.
    - not a BIM manager - does not perform clash analysis

5.1.7 **Establish the project's common data environment**

a) each container to have a unique ID, based upon an agreed and documented convention comprised of a number of fields separated by a delimiter;

b) each field to be assigned a value from an agreed and documented codification standard;

c) each container to have the following attributes assigned:

— status (suitability)

— revision (and version)

— classification (in accordance with the framework defined in ISO 12006-2)

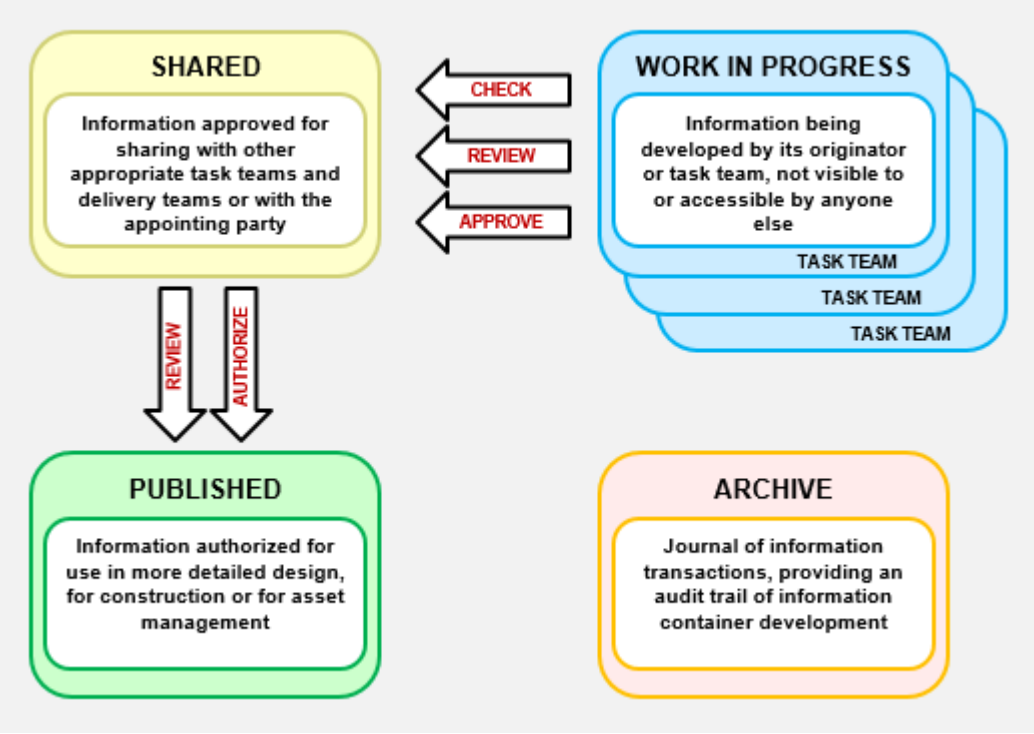
d) the ability for containers to transition between states;

e) the recording of the name of user and date when container revisions transition between each state; and

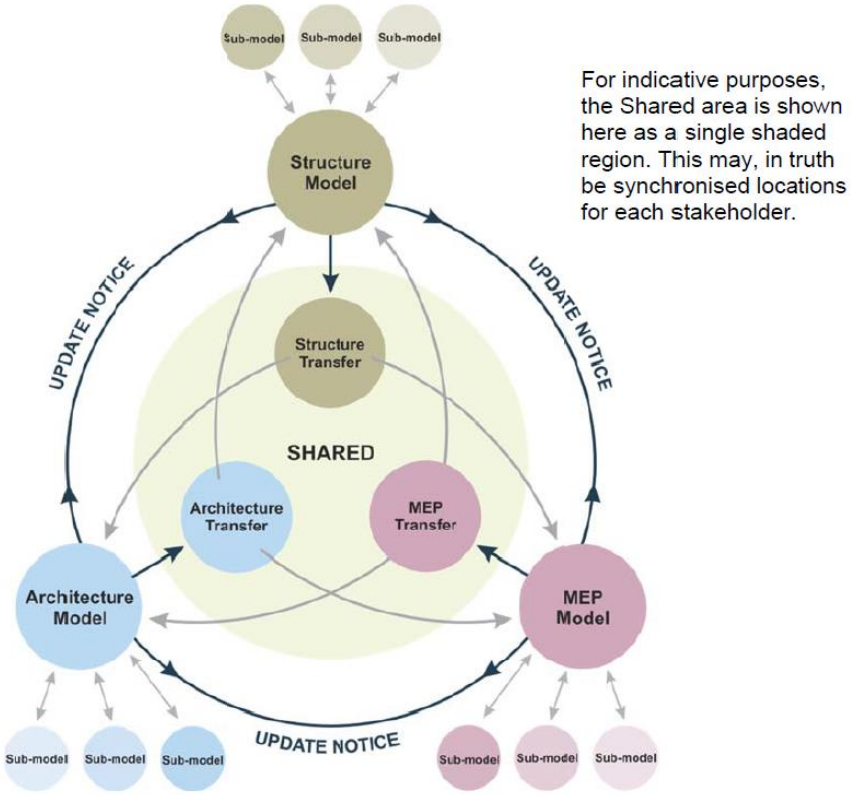
f) controlled access at a container level.

Information statuses in CDE

- Changes to the shared data shall be effectively communicated to the team through traditional drawing issues, change register or other suitable notice, such as e-mail, as defined in the Project BIM Execution Plan.
- It is recommended that Model files should be issued exactly as produced with no additional merging, or editing. All necessary references and linked files should also be issued.



Information statuses in CDE



For indicative purposes, the Shared area is shown here as a single shaded region. This may, in truth be synchronised locations for each stakeholder.

Collaboration Procedures -1

[PROJECT TITLE] [DATE]

SECTION I: COLLABORATION PROCEDURES

1. **COLLABORATION STRATEGY:**
   Describe how the project team will collaborate. Include items such as communication methods, document management and transfer, and record storage, etc.

2. **MEETING PROCEDURES:**
   The following are examples of meetings that should be considered.

MEETING TYPE	PROJECT STAGE	FREQUENCY	PARTICIPANTS	LOCATION
BIM REQUIREMENTS KICK-OFF				
BIM EXECUTION PLAN DEMONSTRATION				
DESIGN COORDINATION				
CONSTRUCTION OVER-THE-SHOULDER PROGRESS REVIEWS				
ANY OTHER BIM MEETINGS THAT OCCURS WITH MULTIPLE PARTIES				

3. **MODEL DELIVERY SCHEDULE OF INFORMATION EXCHANGE FOR SUBMISSION AND APPROVAL:**
   Document the information exchanges and file transfers that will occur on the project.

INFORMATION EXCHANGE	FILE SENDER	FILE RECEIVER	ONE-TIME or FREQUENCY	DUE DATE or START DATE	MODEL FILE	MODEL SOFTWARE	NATIVE FILE TYPE	FILE EXCHANGE TYPE
DESIGN AUTHORING TO 3D COORDINATION	STRUCTURAL ENGINEER	(FTP POST) (COORDINATION LEAD)	WEEKLY	[DATE]	STRUCT	DESIGN APP	.XYZ	.XYZ .ABC
	MECHANICAL ENGINEER	(FTP POST) (COORDINATION LEAD)	WEEKLY	[DATE]	MECH	DESIGN APP	.XYZ	.XYZ .ABC

Collaboration Procedures -2

5. ELECTRONIC COMMUNICATION PROCEDURES:

(Note: File Naming and Folder Structure will be discussed in Section L: Model Structure).
The following document management issues should be resolved and a procedure should be defined for each: Permissions / access, File Locations, FTP Site Location(s), File Transfer Protocol, File / Folder Maintenance, etc.

FILE LOCATION	FILE STRUCTURE / NAME	FILE TYPE	PASSWORD PROTECT	FILE MAINTAINER	UPDATED
FTP SITE: ftp://ftp.****.com/***/****	ROOT PROJECT FOLDER	FOLDER	YES **********	JIM McBIM	ONCE
	ARCH ROOT FOLDER	FOLDER			ONCE
	ARCH-11111-BL001.xyz	.xyz			DAILY
NETWORK drive @ PSU F:\PROJECT\BIM	ROOT PROJECT FOLDER	FOLDER	NO	JIM McBIM	ONCE
Project Management Software www.*****.com					

Quality Control

[PROJECT TITLE] [DATE]

SECTION J: QUALITY CONTROL

1. **OVERALL STRATEGY FOR QUALITY CONTROL:**
   Describe the strategy to control the quality of the model.

2. **QUALITY CONTROL CHECKS:**
   The following checks should be performed to assure quality.

CHECKS	DEFINITION	RESPONSIBLE PARTY	SOFTWARE PROGRAM(S)	FREQUENCY
VISUAL CHECK	Ensure there are no unintended model components and the design intent has been followed			
INTERFERENCE CHECK	Detect problems in the model where two building components are clashing including soft and hard			
STANDARDS CHECK	Ensure that the BIM and AEC CADD Standard have been followed (fonts, dimensions, line styles, levels/layers, etc)			
MODEL INTEGRITY CHECKS	Describe the QC validation process used to ensure that the Project Facility Data set has no undefined, incorrectly defined or duplicated elements and the reporting process on non-compliant elements and corrective action plans			

3. **MODEL ACCURACY AND TOLERANCES:**
   Models should include all appropriate dimensioning as needed for design intent, analysis, and construction. Level of detail and included model elements are provided in the Information Exchange Worksheet.

PHASE	DISCIPLINE	TOLERANCE
DESIGN DOCUMENTS	ARCH	ACCURATE TO +/- [#] OF ACTUAL SIZE AND LOCATION
SHOP DRAWINGS	MECH CONTRACTOR	ACCURATE TO +/- [#] OF ACTUAL SIZE AND LOCATION

Technical Infrastructure Needs

ABC GENEL MÜDÜRLÜK BİNASI VE TESİSLERİ YAPIM İŞİ PROJESİ

BÖLÜM K:TEKNİK ALTYAPI İHTİYACI

YAZILIM

Kullanılacak yazılımlar aşağıda belirtilmiştir. Autodesk yazılımlarında farklı versiyon kullanımında ortaya çıkan uyumsuzluk problemleri yaşamamak için, tüm yazılımların güncellemesi İşveren, ve Yüklenici tarafından ortak karar verildikten sonra yapılacaktır.

BIM KULLANIMI	DİSİPLİN	YAZILIM	VERSİYON
BIM Model Üretimi	Tüm Disiplinler	Autodesk Revit	2016*
Koordinasyon	Tüm Disiplinler	Autodesk Navisworks	2016*
İş Programı	Planlama	Primavera & MS Project	2016 - 2017*

*: Autodesk, 2016 yılı itibari ile kalıcı lisans satışlarını durdurmuştur. Bu sebeple sürece sonradan katılan paydaşlar, belirtilen yazılımların 2016 sürümünü alamamakta, üst sürümü aldığı takdirde ise uyum sorunu yaşanmaktadır. İlgili yazılımlar, belirtilen yeni Autodesk lisans metodu sebebiyle 2018 yılı sonunda en güncel sürüme yükseltileoektir.

Tablo K.1 Yazılımlar Tablosu

5.1.6 Establish the project's reference information and shared resources

The appointing party shall consider:

a) existing asset information:

— from within the appointing party's organization;

— from adjacent asset owners (utility companies etc.);

— under license from external providers (mapping and imagery, etc.)

— within public libraries and other sources of historical records.

b) shared resources, for example:

— process output templates (BIM execution plan, master information delivery plan, etc.);

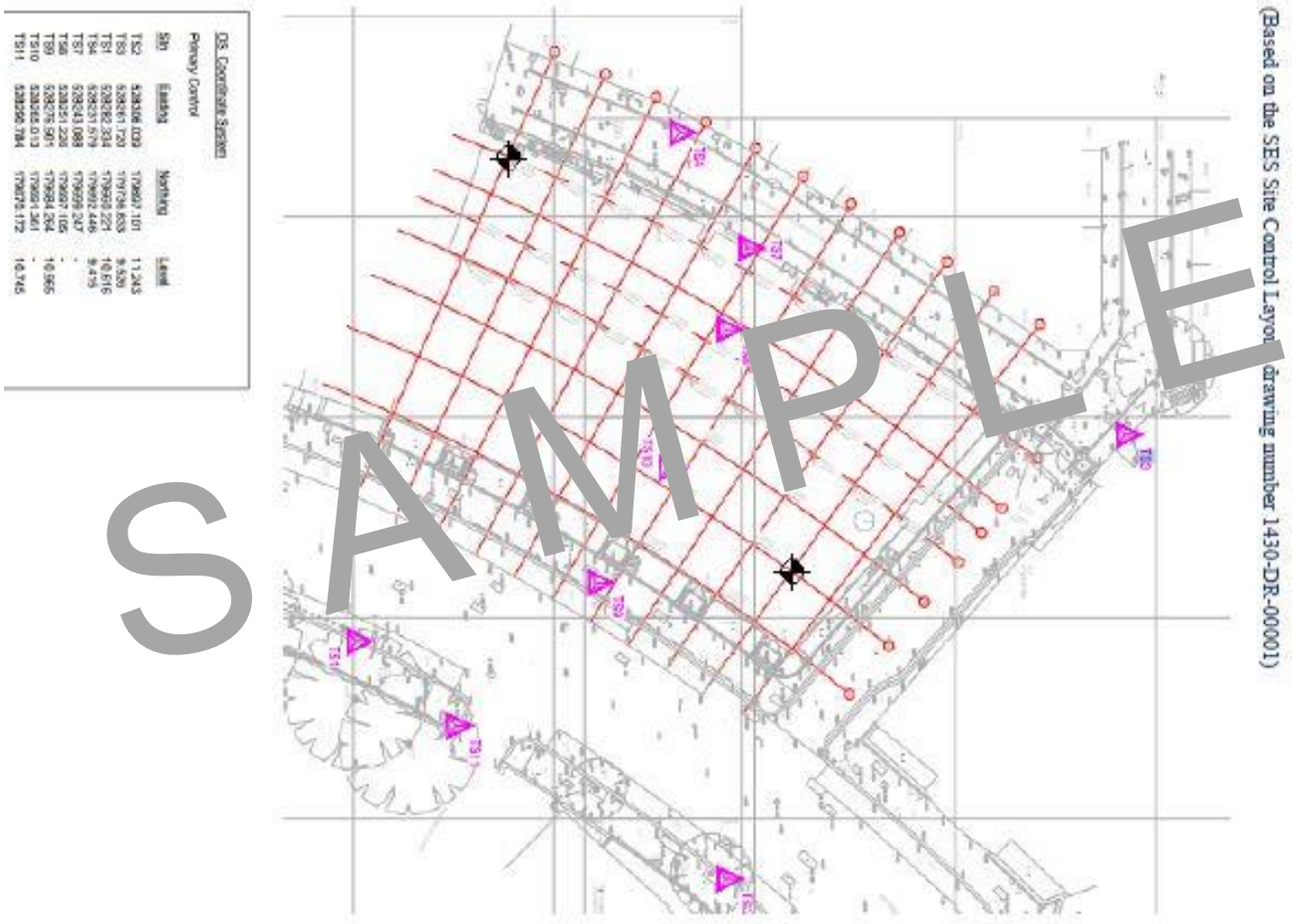
— container templates (2D/3D graphical models, documents, etc.);

— style libraries (lines, text and hatch, etc.); or

— object libraries (2D symbols, 3D objects, etc.).

c) library objects defined within national and regional standards.

Project Origin Point and Coordinates



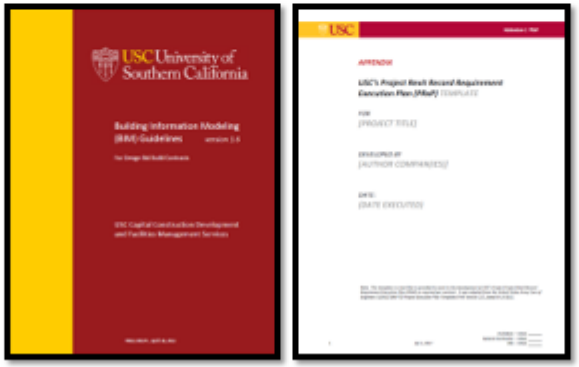
International Resources

Indiana University, BIM Execution Plan, July 2015

Penn State Uni., Project Execution Planning Guide V2.2, January 2019

BIMFORUM BIM Project Execution Plan Guide V1.0, January 2019

Georgia Tech, BIM Execution Plan Template V1.5, January 2016



University of Southern California's Project Revit Record Requirement Execution Plan (PRxP) Template, January 2017

MIT Design Standards, BIM Execution Plan V6.0, November 2016

Cambridge University - Employer's Information Requirements (EIR) – Standards to be used

Employer's Information Requirements (EIRs) for University of Cambridge

UNIVERSITY OF CAMBRIDGE

University of Cambridge
Estate Management
Greenwich House
Madingley road
Cambridge
CB3 0TX
United Kingdom

UNIVERSITY OF CAMBRIDGE

Insert Project Here

M = Mandatory R = Recommended		Application											
Standards		Guidance	Collaboration	Project stages	File naming	Object naming	Drawing	Classification	LOD	CDE	Costing	COBie	Contracts
	BS1192:2007				M	M	M	M		M			
	PAS1192-2:2013	M	M										
	PAS1192-3:2014	M											
Industry	PAS1192-4:2014	R										M	
	PAS1192-5:2015	R											
	NBS BIM Toolkit Level of Definition and classification	R					R	R	R				
	COBie-UK 2012							M				M	
	Uniclass 2015 (NBS Toolkit)							R					
	BS8541-1:2012					M							
	BS8541-2:2011					M							
	BS8541-3:2012					M							
	BS8541-4:2012					M							
	BS8541-5:2015					M							
	AECUK BIM Protocol				M	M							
	CIC/BIM INS									M			
	CIC BIM protocol		M										R
	RICS NRM1: New Rules of Measurement										M		
Bespoke	BIM Execution Plan (BEP)	M	M	M	M	M			M	M			
	UoC Space Measuring Guide	M					M						
	UoC Space Numbering Convention	M					M						