

**DRAFT**

*GUIDE A05.1*  
*DESIGN EXECUTION PLAN*  
*(Preconstruction / construction)*

Project Name: <i>Name</i>	Project No.: <i>Number</i>	Date: <i>Date</i>
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Document No.: **PDG-PDG-PRO-A05.b** Date Created:

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### Revision History

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Date:

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## Document Distribution

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Status key:

**A** – Action

**I** – Information

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## Abbreviations

AIM - Asset Information Model  
BEP - Building Information Modelling Execution Plan  
BIM - Building Information Modelling  
BREEAM - Building Research Establishment Environmental Assessment Method  
CABE - Commission for Architecture and the Built Environment  
CIBSE - Chartered Institution of Building Services Engineers  
COBie - Construction Operation Building information exchange  
CAD - Computer Aided Design  
CAR - Corrective Action Report  
CDE - Common Data Environment  
CDM - Construction Design & Management regulations  
CDM PD - CDM Principle Designer  
CP's - Contractor Proposals  
CV - Curriculum Vitae  
DEP - Design Execution Plan  
DIRS - Design Information Required Schedule (by the Principle Contractor)  
DM - Design Management  
ER's - Employer Requirements  
FM - Facilities Management  
FF&E - Furniture Fixtures and Equipment  
H&S - Health & Safety  
ICT - Information communication Technology  
IDT - Information Delivery Tracker  
IRS - Information Required Schedule (from one consultant by another)  
ITT - Invitation to Tender  
KPI's - Key Performance Indicators  
MIDP - Master Information Delivery Plan  
O&M's - Operation & Maintenance manual  
QA - Quality Audit  
QC - Quality Conformance  
RACI – Responsible / Authorise / Contributing / Informed  
RDD - Reviewable Design Data  
RFI/TQ - Request for Information / Technical Queries  
RIBA - Royal Institute of British Architects  
RICS - Royal Institution of Chartered Surveyors  
SbyD - Secure by Design  
TIDP - Task Information Delivery Plan  
VE/VM - Value Engineering / Value Management

Job role abbreviations are listed on pages 9-10.

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Delete sections from contents that are not required

## 0.0 Introduction

The purpose of the Design Execution Plan (DEP) is to define the project specific processes and provide key information that would pass the 'knock down bus' test; to enable a competent person, should the need arise, to be able to take over the project at short notice and be able to maintain specified programme, service, and performance. It should consist of processes done in the normal course of events. Of course, it is also proof that due process has taken place if/when a project is QA audited.

Process and Tools to be used are to be made project specific, as the need arises and identified in this DEP at regular intervals (suggest monthly). This document is therefore a 'Live' record of design process. To be clear, it is not expected that all sections of this document are to be created on day one. Projects have differing requirements and some processes listed may not be required, in this eventuality they should be struck out with the agreement of the Project Manager/Regional Design Manager.

The project design management tools & processes referenced are the main 'working' contents of the DEP. A brief description of the content of each section can be found below along with a table giving: a Reference code (1), Item name (2), location (3), availability (4) and where appropriate, responsibility, identified. Certain tools are mandatory and are identified with the word '**MUST**' in bold in the associated text, and/or with the process tool being highlighted as Mandatory in red.

1	2	3	4
<b>Ref</b>	<b>Mandatory Item</b>	<b>Location</b>	<b>Availability</b>

### Using this document

The DEP allows for the defining of document availability. This provides 'at a glance' colour identification to whether a process or tool has been completed and is in use (column 4). Words can be added to give additional clarity. The suggested Availability in the Master copy is to be over written with 'Not completed' when initially setting up this document.

### Availability Key:

<b>Restricted</b>	<b>Limited Availability</b>	<b>Public</b>	<b>Not completed</b>
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Process and Tool are to be filed/found in a defined location and referenced in the tables (column 3), to enable parties to access (or request) the original/master copy. If the project DM folder structure is set up in accordance with this DEP, locating information will be simple as the DEP contents list and folder structure follow the same numbering system.

### Location Key: (amend as required)

Contractor project server.	CDE	Web site	Other
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Involvement in processes and tools is differentiated by the categories: Responsible, Authorise, Contributing and Informed (RACI). It is to be filled out after agreement with other project parties, the DM & PM have final say. The key is key is to be consistent throughout this document. This is **NOT** a mandatory part of the DEP and can be deleted throughout this document with agreement of the MP or RDM.

### Involvement (RACI) Colour Key:

Responsible	
Authorise	
Contributing	
Informed	

**Involvement (RACI) Key: (example)**

LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC
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**Key People**

Contact details of the key project personnel are to be listed here:

Role	Name	Contact Details
Client Representative – PM / QS		
Main Contractor – PM		
Lead Designer		

Where this document is filed:

Ref	Item	Location	Availability
MDM003b - tbc	DEP	VFP or McL N / O drive	Public
LDM	PDM	PIM	ADM
	PM	CM	PCM
		PP	COM
		BSM	FDM
			DC



## 1.0 Lead Design Management

### Design Management Strategy

There are a number of factors that will affect design management strategy; the clients chosen procurement route and the contractors' response to this, size and complexity. The procurement route will dictate the stages to account for in the process (refer to the Whole Project Process Plan of Work), whilst size and complexity will dictate numbers of and specialisms of design managers needed to facilitate the process at different stages.

For large and/or complex projects with numerous team members, it will be important to map out design management structure and reporting lines, to ensure clarity of communication for both reporting up the chain of command and delegating down.

### DM Resources

A list of all the design management resources allocated to the project: (amend as required)

Discipline	Abr.	Name	Stage	Allocation %
<b>Design</b>				
Regional Design Manager	<b>RDM</b>			
Lead Design Manager	<b>LDM</b>			
Technical Design Manager	<b>TDM</b>			
Assistant DM	<b>ADM</b>			
Building Services Design Manager	<b>BSM</b>			
Façade Design Manager	<b>FDM</b>			
VFP Administrator	<b>VFP</b>			
Project Delivery Manager	<b>PDM</b>			
BIM Information Manager	<b>BIM</b>			
Project Information Manager	<b>PIM</b>			
Document Controller	<b>DC</b>			
Other				
<b>Other Project Team Members</b>				
Bid Manager	<b>BM</b>			
Project Manager	<b>PM</b>			
Commercial Manager	<b>CM</b>			
Procurement Manager	<b>PCM</b>			
Construction Manager	<b>COM</b>			
Project Planner	<b>PP</b>			
Other				

**Pre-construction DM Audit**

Completing the pre-construction design management audit is a **MUST** for all bids. The aim is to identify gaps in design, opportunities and risks. Derogations and Clarification are to be scheduled out and agreed with the bid team.

This document **MUST** be part of the hand-over pack to the construction team.

Ref		Mandatory Item			Location				Availability		
tbc		Pre-Con DM Audit			tbc				Restricted		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

**Design Fundamentals**

To be completed to provide key project information:

General info		
	Procurement route:	
	Commodity:	Does the building design work? Does it answer the brief?
	Approximate value/GMP:	
Programme key dates:		
01	Bid Win	Date
02	Start Stage 3 (RIBA D) design	Date
03	Stage ? design freeze	Date
04	Planning submission	Date
05	Appointment/Novation documents signed	Date
06	RIBA Stage 3/4 (RIBA E) design started	Date
07	CP's submitted	Date
08	Review and agree Cost Plan update	Date
09	Start on Site	Date
10	Power on	Date
11	Partial Possession	Date
12	Practical Completion	Date
Description		
	Site context:	
	Project description:	
	Built form:	
	Access:	

	Public realm:	
	Landscape:	
	Sustainability:	
	Key Area fig's & ratios:	Refer to Fact Sheet: @?
	<b>Statutory</b>	<b>Contact Details</b>
	LA Planning:	
	Building Control:	
	Highways Agency:	
	Environment Agency:	
	English Heritage:	
	Nature England:	
	Other:	
	<b>Statutory Services</b>	<b>Contact Details</b>
	Water:	
	Foul:	
	Electricity:	
	Gas:	
	Telecoms:	
	<b>Compliance / level</b>	<b>Contact Details</b>
	BREEAM: <b>Rating here</b>	
	Secure by Design:	
	Other	

**DM Project Set-up**

The DM Project Set-up **MUST** be completed directly after award. It is to be used to reference the briefing documents, applicable regulations, identifying consultants, strategies, surveys and design management trackers to be used. Most of the information will be available from the Pre-Con DM Audit at hand-over to the site team.

It is in affect a summary DEP and should be reviewed regularly at internal team meetings.

Ref		Mandatory Item			Location				Availability		
tbc		DM Project Set-up			tbc				Public		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### Contact Directory

A contact directory of ALL parties involved in the project (all stages) is to be kept up to date at all times.

Ref		Mandatory Item			Location				Availability		
		Contacts Directory			CDE				Public		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### Organogram

Place Org diagram here if required

### Reporting

Reporting is a **MUST** to ensure the Senior Leadership team is kept informed of progress and any critical issues.

Internal DM reports are defined by company proforma. DM content in client reports is to be agreed with the PM. Timing of reports should be such that consultants produce their reports 2/3 days prior to project report to the Senior Leadership team and client team.

The timing of all reports are to be defined below:

From	To	Report type	When
Designer	Design Manager	Designers Status report	3 <sup>rd</sup> Wednesday of the month
Design Manager	Project Manager	DM Status report	Last Monday of the month
Project team/PM	Senior Leadership	Project status report 1	Last Wednesday of the month
Project team/PM	Client/Agent	Project status report 2	Last Friday of the month

Amend as required

Ref		Mandatory Item			Location				Availability		
tbc		Design Managers Report to the RDM			tbc				Not completed		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

Ref		Mandatory Item			Location				Availability		
tbc		Design Managers inclusions in the PM's Report			tbc				Not completed		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

Designer's reports are dealt with in section 7.0 below.

### KPI's (delete this sub-section if not used)

The KPI tool, is for scoring project design. Categories have been pre-defined to ensure a consistent approach for all projects; to gather comparable and meaningful data.

The tool referenced here is stage based:

Ref		Item			Location				Availability		
tbc		Project KPI			tbc				Restricted		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC
tbc		KPI End of Year Totals			tbc				Restricted		
RDM (only)											

### Planning of Asset Realisation

An asset, whether building or infrastructure needs to be realised in accordance with the client’s business plan. An asset, as opposed to a building or structure, embodies the concept of commercial (or service) value. It is not uncommon for clients to keep their asset running while construction is being undertaken.

Describe project specific constraints here:

Ref	Item
01	Live sites.
02	Phased hand-over, refer to contract programme dates.
03	Restricted site, refer to Architects site plan and contractors phasing slide show.
04	Specialist contractor processes – tbc.

### Risk & Opportunity (delete this sub-section if DEP is to be circulated externally)

The project Risk Register is the responsibility of and owned by the Project Manager/Commercial Manager. It is the responsibility of all disciplines to add project specific risks to the register. The consultant designers are to forward their evaluation of risk to the Design Manager for review and inclusion as appropriate.

Ref		Mandatory Item			Location				Availability		
tbc		Risk Register (live document)			tbc				Not completed		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### Design Audit

There are 2 categories of design audit; Process audits which are for checking the design management set up of projects and Technical audits for checking compliance to: regulations, best practice standards and brief.

### Process Audit

The DEP is to be used to check process compliance. The last section ‘Managing This Document’ contains a CAR table which is to be filled in with any none compliances by the Auditor (Regional DM).

Ref		Item			Location				Availability		
tbc		DEP / Section 21			tbc				Restricted		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### Technical Audit

Technical audits are to be carried out by parties with the correct technical knowledge and experience. Technical audits can be undertaken as due diligence when receiving information from others to validate compliances or when issues arise. Audits are to be targeted accordingly; i.e. an overall review of ITT information may be less probing than, for example, a review of layouts specifically for AD M or a façade for AD L.

## 2.0 Client

### Client Related Processes

The project needs to be planned to take due consideration of all client related contractual, and other agreed, processes. The management time and organisational skills to undertake these processes should not be underestimated.

The outputs of these processes will form part of the inputs into the design (and construction), and will need to be accounted for when planning resources and design tasks, in so far as is reasonable, at day one.

These **may** include(s): (Amend list as required)

Ref	Item	Location	Availability
tbc	Reviewable Design Data	tbc	Not completed
tbc	RFI's	tbc	Public
tbc	Monitoring team/ Technical approvals	tbc	Not completed
tbc	Stakeholder sign offs	tbc	Not completed
tbc	Operation of asset – Live environment restrictions	tbc	Not completed
tbc	Phasing and decanting restrictions	tbc	Not completed

## 3.0 Systems, Protocols & Tools

### Systems deployed and aligned

DM's **MUST** ensure all design consultants, Contractor and client are using compatible systems. The choice of system and the requirement to align systems must be written into the consultants' appointment process.

**Schedule of systems and software:** (amend as required)

Code	Description
CDE	Common Data Environment – 4Projects
BIM	Building Information Management – as defined by the BEP (BIM Execution Plan)
CAD	Computer Aided Design (e.g. Autocad)
	Office software - Microsoft Word, Excel, etc
	Other

**Control of Documentation and Data**

It is vital that the method of designing (i.e. 3D (BIM) or 2D (CAD)) is fully understood and agreed between all parties and competence checked, before these protocols are written. Information is the life blood of construction projects. Therefore, the **DEP/BEP** should describe the way to manage and control the documents used.

**2D (delete if working to BEP)**

Ref	Mandatory Item	Location	Availability
tbc	Document Protocols	tbc	Public
LDM   PDM	PIM   ADM   PM	CM   PCM   PP   COM	BSM   FDM   DC
BS1192	Document Protocols	shop.bsigroup.com/SearchResults/?q=BS1192	Public

**BIM (delete if working to 2D protocols)**

Ref	Mandatory Item	Location	Availability
tbc	BEP Protocols	tbc	Public
LDM   PDM	PIM   ADM   PM	CM   PCM   PP   COM	BSM   FDM   DC
PAS1192-(1-5) + other doc's	BIM Protocols	shop.bsigroup.com/Navigate-by/PAS/	Public

**CDE (amend to suit 3D (BIM) or 2D (CAD))**

Ref	Item	Location	Availability
tbc	CDE Protocols	tbc	Public

**4.0 ER's & Contract**

**ITT/Tender Documents**

The DM Project Set-up **MUST** be completed directly after award, and updated at each stage thereafter. It **MUST** include a list of all the Tender documentation, statutory requirements and regulations.

Ref	Mandatory Item	Location	Availability
tbc	DM Project Set-up	tbc	Public
LDM   PDM	PIM   ADM   PM	CM   PCM   PP   COM	BSM   FDM   DC

**Scope**

Project scope definition is a fundamental factor when it comes to project requirements. It is vital for the Contractor to be able to define the scope of the project in order to successfully enter into an agreement with the client. Scope certainty is required to enable cost and programme certainty.

Project scope is defined by the following: **(amend to be project specific & stage specific)**

Ref	Item	Location	Availability
Various	ITT information (ER's / AR's).	tbc	Not completed
Consolidated Title Plan	Land Registry deeds for ownership boundary.	tbc	Not completed
tbc	Development boundary for extent of works.	tbc	Not completed
tbc	Surveys	tbc	Not Completed
tbc	Health and Safety Plan	tbc	Not Completed
tbc	Developers specification	tbc	Not completed
tbc	Tenant lease agreements	tbc	Not completed
tbc	Refer to: Pre-con Design Audit	tbc	Restricted

## Contract

It is fundamentally important to understand the design related clauses in the Main Contract. These may have a bearing on process, programme, appointments and risk. Project specific clauses **MUST** be discussed with project Commercial Manager.

## 5.0 CP's

The content of the CP's may be defined by the ER's, where it is not, the content and style is to be defined by the contractor, with advice from the Lead Designer. Content will be greatly affected by project stage, risk management and bid strategy, however a generic schedule is referenced below.

Before you start make sure you know what the client/agents want and when it is to be submitted.

### CP schedule

The submission will most likely need to include the following:

- Executive Summary;
- Project description;
- Design information (including FF&E, ICT and Telecoms);
- FM;
- H&S;
- Works Programme and Management;
- Soft Landings; &
- Financial.

Ensure there is an internal Senior Leadership approval before submitting to the client.

Ref	Item	Location	Availability
tbc	CP Schedule	tbc	Not completed
tbc	Derogations schedule.	tbc	Not completed



tbc	Clarifications	tbc	Not completed
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## 6.0 Site & Surveys

The DM Project Set-up or the Pre-Con DM Audit **MUST** be completed directly after award, and updated at each stage thereafter. It **MUST** include a list of all the surveys required to undertake the project, and identify the party responsible (client / contractor).

All surveys are to be uploaded to the CDE or saved to the project server.

Ref		Mandatory Item			Location				Availability		
tbc		DM Project Set-up or Pre-Con DM Audit			tbc				Public		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

It is the designers' responsibility to identify the site information they need to undertake their design and provide suitable scoping documents to the main contractor to commission the surveys in good time to meet programme milestones.

## 7.0 Consultants

Consultant designers are appointed through client requirement (novation) or selected by the main contractor. When selecting consultants there are a number of strategic considerations which are to be considered and discussed with the senior leadership team.

### Appointment strategy (delete if novated)

Ref		Item			Location				Availability		
tbc		Consultant Appointment Strategy			tbc				Public		
tbc		Competence - skill, knowledge, ability			tbc				Not completed		

### Balanced Score Card (delete if not required)

To be used when consultants are bidding for projects to ensure a fair and responsible outcome. Instructions are included in the document.

Ref		Item			Location				Availability		
tbc		Balance Score card			tbc				Public		
RACI - bta											

### Appointment Tracker (DM Project Set-up)

The DM Project Set-up or the Pre-Con DM Audit **MUST** be completed directly after award, and updated at each stage thereafter. It **MUST** include a list of all the consultant disciplines required to undertake the project, and identify the party responsible (client or contractor).

Ref		Mandatory Item			Location				Availability		
tbc		DM Project Set-up or Pre-Con DM Audit			tbc				Public		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### Appointments & Schedules

Appointment documents for consultants are a **MUST** whether first appointed by the contractor or novated. They should be back to back with the main Contract and signed up to, at the same time as the main contract. This is to avoid contractual gaps and, if signed later on in the project, an imbalanced negotiation position.

Consultant appointments are to be managed and undertaken in accordance with the following documents as a minimum: (amend as required)

Ref		Mandatory Items			Location				Availability		
tbc		Design Responsibility Matrix (DRM)			tbc				Public		
tbc		Schedule of Services (SoS)			tbc				Public		
tbc		Design Programme			tbc				Not completed		
tbc		DIRS Tracker/ MIDP			tbc				Public		
tbc		Activity Schedule			tbc				Restricted		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

Other documents such as the ER's, derogations, DEP/BEP, etc, should also form part of the schedules.

### CDM

H&S is governed by the CDM statutory regulations and the Main Contractor's H&S policy. All parties **MUST** comply with their CDM duties, and **MUST** be familiar with the contractor's H&S policy on **ALL** projects at **ALL** stages.

Refer to:

Ref		Mandatory Items			Location				Availability		
n/a		CDM regulations.			www.hse.gov.uk/construction/cdm/responsibilities.htm				Public		
tbc		Contractor Policy			tbc				Public		

### Resources

Resources, in terms of human capital, are the most important asset for professional service firms. It is therefore fundamental that checks are in place to ensure consultancies appointed have the depth and breadth of knowledge & skill to undertake project services and deliverables. Ensure CV's reflect the necessary competencies for all key members of the design team. Any proposed changes to personnel need to be brought to the employer's attention in accordance with contract procedure.

Design practise resources are to be planned for all commissioned project stages. Resource planning can be undertaken to varying levels of sophistication with spreadsheets and/or planning software.

Ref	Item	Location	Availability
tbc	Team Structure & key CV's	tbc	Public
tbc	Resource Profile	tbc	Public

### Reporting

Designers are to provide **weekly/fortnightly/monthly** reports as defined in section 1.0 above, to ensure they are aligned in the hierarchy of reports. The contents are to be defined by the following proforma. If requested the Lead Designer is to compile a co-ordinated project design team report.

Ref	Mandatory Items	Location	Availability
tbc	Designers Report	tbc	Public

## 8.0 Statutory & Other

There are a number of statutory bodies (e.g. LA Planning, Building Control) and other non-statutory standards (e.g. BREEAM, SbyD) that need to be navigated through. Experience is hard to beat with these issues and the necessary consultants **MUST** be employed, to track conditions and advise.

### DM Project Set-up

The DM Project Set-up or the Pre-Con DM Audit **MUST** be completed directly after award, and updated at each stage thereafter. It **MUST** include a list of all the tracking schedules required to undertake the project.

Ref	Mandatory Item	Location	Availability								
tbc	DM Project Set-up or Pre-Con DM Audit	tbc	Public								
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### Condition/Sign off Trackers

The Lead designer is to arrange Technical meetings with statutory authorities and contracted standards (BREEAM, SbyD, etc), and ensure all design/technical information is prepared for all meetings. The detail of all conditions and/or credits are to be tracked to enable them to be managed, by the relevant consultant or the main contractor. The summary boxes of each of these trackers are to be plugged into the reporting dashboard and appended to appropriate reports.

Ref	Mandatory Item	Location	Availability
-----	----------------	----------	--------------

tbc		Planning Condition Tracker			tbc				Public		
tbc		Building Control Condition Tracker			tbc				Public		
		Other									
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

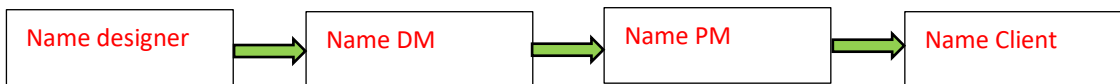
### 9.0 Communication, Meeting Plan and Minutes

A project team is made up of numerous organisations; of different sizes, disciplines, and cultures which need to be bound together with a common project goal.

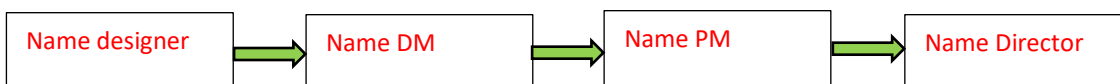
#### Reporting Lines

It is essential for all parties to understand the project reporting lines. There may be several reporting lines; internal reports, to client reports, to statutory issues. General they will follow the project organisation structure, and are to be listed below:

Internal design reporting line:



Client reporting line:



Add more reporting lines as required.

#### Meeting Plan

Managing numerous types of meetings across one or more projects for numerous people can be problematic and invariable some parties will have to move meetings around to suit. So it is important to stick to day and time when agreement is reached. Meeting are often arranged in sequence to allow decisions from one to be reported in another. A meeting matrix informs all parities of arrangements for the meetings they are invited too and those that they are not.

Ref	Item			Location				Availability			
tbc	Meeting Matrix			tbc				Public			
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

For each and every meeting an agenda is to be circulated. ‘No agenda no attendance’ is a mantra in some companies; meetings need a reason, an aim and outcome.

All meeting are to be minuted, to ensure there is an accurate record and be circulated. The Chair and the person minuting should be identified beforehand and should not be one in the same.

Ref	Mandatory Items	Location	Availability
-----	-----------------	----------	--------------

tbc		DTM Agendas			tbc				Public		
tbc		DTM Meeting Minutes			tbc				Public		
tbc		Engagement Meeting Minutes			tbc				Public		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

## 10.0 Compliance

### Design & Development Review

Information **MUST** be checked throughout the design process from concept to construction detail, to ensure design answers the brief and conforms to requirement and standards, or betters them. When undertaking a Design Review it is important to ensure all parties understand their responsibilities with regard to the checking of and authorising of various design and contractual documents. Only those with the correct level of assigned responsibility as defined in the Matrix of Signatories, are to undertake checks and authorise the issue of documents.

Ref	Mandatory Items	Location	Availability
tbc	Signatures of Authority	tbc	Public

### Design & Development Verification and Validation

Verification and validation are independent processes that are used for checking that a product, service, or system meets requirements and specifications, and that it fulfills its intended purpose.

Design and development **verifications** use objective evidence to confirm that design and development outputs meet specified input requirements.

Ref	Criteria	Process
01	Design solution, details, specifications, etc	Design and Development Reviews
02	Technical solutions meet client standards	Client Technical approvals
03	Technical solutions meet statutory standards	External Technical approvals (e.g. Building Control, BREEAM, SbyD)
04	Reviewable Design Data	Engagement

Design and development **validations** use objective evidence to confirm that products meet the requirements which define their intended use or application. **(Omit this section on validation, if there are none stipulated by the client or contractor on the designers)**

**All validation criteria and processes must be agreed with the client and be wholly within the gift of the design team to dictate.** In other words, criteria cannot relate to how an asset is managed, the personnel employed, any equipment installed after hand-over, the output rate, profitability, etc.

## 11.0 Stage & Design Approvals

Stage and Design Approvals are to follow the Compliance process (10.0) above. An internal review/approval should always be undertaken, to ensure the information is ‘sanitised’ before issue to a clients’ team for stage approval. It is a **MUST** to ensure the client/representative undertaking the approval have the authority to do so. A completed stage is to be approved by the client (as required) before the next stage can be started. To do otherwise is a risk to designers’ fees, as abortive work could result.

**Mandatory** list of client personnel with authority to approve design:

Name	Position/Title	Company	Authority agreed with?

### 12.0 RFI’s & TQ’s

Design Information gaps and clarifications required during a project are dealt with by 2 similar processes one involving the client and the other between consultants and contractors.

#### Request for Information Procedure (RFI)

Requests for Information will be used to obtain and track specific information required from the client team.

#### Technical Queries (TQ’s)

Technical queries will be used to request and track specific information required from the design team and contractors

Refer to:

Ref	Mandatory Items	Location	Availability								
tbc	RFI/TQ Tracker	tbc	Public								
tbc	RFI answers	tbc	Public								
tbc	TQ answers	tbc	Public								
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### 13.0 Design & Development Planning / Programmes

Programmes are one of the corner stones of managing construction projects. They are the system by which the ‘WHEN’ is worked out and are the primary method of monitoring progress.

The Lead Designer will be responsible for ensuring all consultants agree to an integrated and co-ordinated design programme that shall be derived from the contract dates and the contractors tender & construction programmes.

Designers’ programmes are ideally to be produced in the software, dictated by the contractor to enable all programmes to be integrated as necessary.

Planning software to be used on this project is: **????**

(Most common software used is: ASTA/Primivera/Microsoft/other)

#### Content

Design programmes are to account for the; decision making processes, information gathering, information creation periods, issue dates and approvals. In some sectors the decision making is the greater work load [than the drawing]. Critical paths are to be monitored and managed closely to avoid project delay.

Implication of change Control to design production and proposed programme mitigation scenario's, are to be provided by the Lead designer to the contractor.

**List of Programmes**

The following list of programmes is relevant to the design process. All designers are to review and where necessary provide comment on these programmes.

List of programmes (Amend list as required):

Ref	Item	Location	Availability
tbc	CPSA Programme		Not completed
tbc	Construction Programme	tbc	Not completed
tbc	Tender Events Schedule/ Programme	tbc	Not completed
tbc	Co-ordinated Design Programme	tbc	Not completed
tbc	Sub-contractors Design Programme		Not completed
	Other		

**14.0 Deliverables**

Deliverables are dictated by the procurement route and project stage. They are needed by different parties for different reasons. All deliverables are to be scheduled and tracked for each stage. There are a variety of industry names for these schedules (refer to abbreviations, page 4), whichever is needed it is a fundamental **MUST** for the project DM to manage this process.

**Trackers**

Deliverable Tracker to suit process defined here:

Ref	Mandatory Items	Location	Availability								
tbc	MIDP or DIRS/ TIDP	tbc	Not completed								
tbc	IRS	tbc	Not completed								
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

**Squad Reviews**

Construction project team squad reviews **MUST** be undertaken on all fundamental package deliveries; For Costing, For Tender, For Construction, etc. The squad is to be defined in the RACI below. The timing of and

period for reviews will be determined by the CDE workflow as described in the CDE protocols – refer to section 3.0

Ref		Mandatory Items			Location				Availability		
tbc		Squad Review			tbc				Not completed		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### 15.0 Change Control

A Change is a deviation from the main contract design brief or client signed off element of design thereafter. Changes can be proposed by various parties for many reasons, none however, become variations unless instructed. All proposed changes need to be reviewed; a process to check that information conforms to requirements and standards, or better them, is costed and instructed as laid down by the main contract.

Note: Design Development is not to be confused with Design Change; often a point of debate!

Reference is to be made to the Main Contract clauses for Change Control/Variations and the contractors’ commercial management procedures. While design managers are heavily involved with the design team in managing proposed design change and instructed variation, this process is a Commercial Management responsibility.

Refer to:

Ref		Mandatory Items			Location				Availability		
tbc		Main Contract			tbc				Not completed		
tbc		Contractor Commercial Change Control Procedures			tbc				Not completed		
tbc		Design Change Control Procedure			tbc				Public		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### 16.0 Quality

**Quality Standards** (If this section is not relevant to the project it is to be deleted from the DEP)

There are differing quality definitions; one should, however refer to the standards described in the main contract and those dictated by the contractors’ process. Architects sometimes use the CABE criteria by which to define quality holistically for LA Planning submissions. Other standards exist and if they are to be used, should be listed below.

Refer to:

Ref	Item	Location	Availability
	Design Council CABE.	www.designcouncil.org.uk/	Public
	CIC - DQI	www.dqi.org.uk/	Public



	Other		
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**Quality Conformance (samples & benchmarks)**

Quality Conformance (QC) is the process that checks and ensures the ‘product’ has conformed to brief design & specification, and therefore client expectations. For items to be part of this process they must either be written into a specification, or scheduled out and included in the Main Contract. It is important that protocol names the person/s with the authority to approve QC items.

Client/Representative personnel with authority to approve QC:

Name	Position/Title	Organisation	Approval of what?
			Facade
			MEPh
			Interior

Time spans for creating, viewing and the approval of these items is to be included for, on all programmes. All QC requirements **MUST** be clearly identified in all relevant sub-contract packages; the omission of which can be costly and a programme risk.

The PM has the remit to include items not dictated by the main contract.

Quality Conformance definitions and a summary of the process are included on the QC tracker.

Refer to:

Ref	Mandatory Items	Location	Availability								
tbc	Approval proforma	tbc	Public								
tbc	QC Tracker	tbc	Public								
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

**17.0 VE/VM (retain as maybe required in a future stage)**

Value Engineering (VE) and Value Management (VM) are processes for enhancing a cost/benefit ratio. Benefit for less cost is as much value enhancement as more benefit from same cost. Creation of value is normally measured financially but could also be measured by results from service provision.

VE/VM is normally instigated by the client/end user for a number of reason, ranging from project inflation to the need for enhanced competitiveness. Issues tend to arise because of market changes over lengthy project time scales that are a factor of the built environment.

Workshops are to be minuted and VE/VM changes **MUST** be subject to variation instruction. Cost, programme and health & safety implications **MUST** be feed into the process.

It is fundamental to understand who has the authority to sign off VE/VM changes, and the contractual mechanism for doing so.

Design time and cost is subject to appointments agreements mechanism for calculating fees.

Client/Representative personnel with authority to approve VE/VM:

Name	Position/Title	Organisation	Approval of what?
			Facade
			MEPh
			Interior

### 18.0 Design Issues

The Design Issues Log is a fundamental tool to manage design and is a **MUST** for design mangers. Items are to be prioritised with high risk issues being flagged red.

Expect a lot of issues in the early design stages, as design progresses fewer issues come to the fore. However a number of unexpected issues almost always become evident during construction. Ensure the design team is retained to resolve these and that appointments cater for this.

Correspondence on issues are to be saved to either the project server or CDE.

Refer to:

Ref	Mandatory Items	Location	Availability
tbc	Design Issues Log	tbc	Public
LDM	PDM PIM ADM PM	CM PCM PP COM	BSM FDM DC

### 19.0 Design Subcontractors and Supply Chain agreements

#### Contractor Design Portions and specialist systems

Design consultants need to understand which elements or packages are to be undertaken by design sub-contractors (CDP) and be cognisant of the effect of construction systems used. The design is to be undertaken in a manner that befits the intended manufacturing/ construction process to ensure the final results on site can be built holistically and be progressed to a point where the design can be ‘taken on’ by the CDP; usually end of RIBA stage 3. The main contractors site project team is to undertake squad reviews of consultant’s information to ensure it is to a suitable standard and comment on the information as required via the CDE. Often CDP subcontractors are involved early in stage 3 or even 2 to provide advice. Often this advice is pre-package award and the subcontractor bears on liability for the advice given. This needs to be made clear to designers.

The Design Team is to be informed of the intended list of CDP’s (refer to DRM).

#### Supply Chain agreements

Supply chain agreements are common with main contractors (to varying degrees). This information assists designers in making decision that align with construction preferences and potentially avoid abortive work.

Supply Chain list: (Amend list to be project specific)

Ref	Item	Company
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01	Drylining	Company & Company
02	Lifts	Company & Company
03	etc	Company & Company

### Package Design Responsibility

Sub-contractor design responsibility is defined by Regulations, standards, stage, geometry, product performance and logistics. At a high level this is set out by the DRM, at a detailed level the interface line is to be defined. Subcontractor design is to be undertaken to programme and with full cognisance of the consultants’ design. The Sub-contractor will obtain all information necessary for the preparation of, and shall submit to the Principle Contractor for review & comment (DT to be involved), and approval of details relevant to the Sub-contractors’ design responsibilities. Such review in no way diminishes the Sub-Contractors’ responsibilities and liabilities under the Sub-Contract to conformance to contract documents and procedures and compliance to regulations and relevant standards, coordination and timeliness of their design.

Ref		Item			Location				Availability		
tbc		Package Procurement Document			tbc				Not completed		
tbc		Trade Scope Document			tbc				Not completed		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

### Scope Interface Drawings

Scope interfaces are to be managed to ensure scope gaps in procurement and construction do not occur. This starts with the designers’ drawings either through, designers’ annotation or by the contractor project team marking up scope on the designers’ reference and detail drawings. It is essential for this process to start before engagement with design subcontractors to enable scope dialogue during the tender process.

### Design Deliverables

These will be developed in line with the requirements of the Projects **second stage** tender prior to the first subcontractor being appointed and will be detailing within the Trade Scope documents produced.

This will include:

- General scope (summarises the scope of works for that particular package and overall responsibility);
- CDM responsibilities;
- Design production deliverables (what is expected to be issued by the trade contractor);
- Methods of providing information and to protocol (SMP for 2D and/or BIM);
- Technical information (to prove compliance of product and to regulation);
- QC items as required; &
- Subcontractor working programme (design, procurement and construction).

### Tender Review

The Principle Contractor may request the Design Manager and the design team to partake in the tender review process to: review, comment and advise on technical aspects of the CDP proposal. This service is to be included in the designer appointment Schedule of Services (SoS). The process will be managed by the

Procurement Manager. All findings and decisions will be treated with confidence by all parties, until such time that the Procurement Manager notifies the team otherwise.

### Squad Reviews

Construction project team squad reviews **MUST** be undertaken on all CDP package deliveries. The squad is to be defined in the RACI below. The timing of and period for reviews will be determined by the CDE workflow as described in the CDE protocols – refer to section 3.0

Ref		Mandatory Items			Location				Availability		
tbc		Squad Review Proforma			tbc				Not completed		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

## 20.0 Hand-over & Close out (Capex to Opex)

This section is not normally managed by the project DM but can be useful in informing the designers of their obligations at RIBA stage 6.

### Soft Landings (delete if not a project requirement)

The term ‘soft landings’ refers to a strategy adopted to ensure the transition from construction to occupation is ‘bump-free’ and that operational performance is optimised.

This transition needs to be considered throughout the development of a project, not just at the point of handover. Ideally the client should commit to adopting a soft landings strategy in the very early stages so that an appropriate budget can be allocated and appointment agreements and briefing documents can include relevant requirements. This should include agreement to provide the information required or commissioning, training, facilities management and so on, and increasingly will include requirements for Building Information Modelling (BIM).

To ensure that a soft landings strategy is implemented properly from the outset, it may be appropriate to appoint a Soft Landings champion to oversee the strategy. Facilities managers should also be involved from the early stages.

The framework includes 5 key stages:

Ref		Item			Location				Availability		
n/a		BSRIA Soft Landings			www.bsria.co.uk/services/design/soft-landings/				Public		
n/a		GSL			www.bimtaskgroup.org/gsl/				Public		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC

Role	Name	Contact Details
Soft Landings Champion	tbc	tbc

### Information Hand-over

The format and contents of the following documents is to be agreed with the CDMC/Employer/End User/BREEAM assessor as appropriate:

- Health and Safety File/Building Manual;
- Record drawings;
- Building Log Book; &
- Building User Guide.

For a BIM project the following will also be needed:

- BIM model (federated and in a format to suit the clients team); &
- AIM (inc. COBIE data).

Ref		Item			Location				Availability		
tbc		Health and Safety File/Building Manual			tbc				Not completed		
LDM	PDM	PIM	ADM	PM	CM	PCM	PP	COM	BSM	FDM	DC
BS1192-4		BIM Information Exchange requirements			shop.bsigroup.com/SearchResults/?q=BS1192				Public		

**BIM and O&Ms (delete if not a BIM project)**

Design consultants will assist in preparing the BIM model and data capture (COBie), and preparing user Data Packs required, as scheduled in the SoS. Similarly design subcontractors, will provide their elements of BIM model and data (for COBie), and where contracted, provide user training for equipment and systems (refer to the BEP as required). Service life and life cycle of elements can be captured as can information on spare parts, materials and cleaning products. This information should be available to Facility Management personnel and other building management stakeholders in the form of a PIM from which they can create their AIM.

## 21.0 Managing this document

To be updated as required. Most updates, however, will be contained within the content of the associated process tools. DEP non-conformances and risks are to be listed below and reviewed **fortnightly/monthly** with the Regional Design Manager. Any item that is thought likely to require a 5 days Corrective Action Report (CAR), is to be brought to the attention of the Project Manager asap.

### DEP Corrective Actions List

Item	Date identified - Non Conformance/Risk	Date - Mitigation
001		
002		
003		

Text boxes to have colour RAG to indicate level of Risk before and after mitigation.

#### Key:

	High Risk
	Medium Risk
	Low Risk

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**Appendix A – Server Folder Structure** (add sub-folders as required)

<b>Code</b>	<b>Main folder</b>	<b>Sub-folder</b>
<b>0.0</b>	<b>Introduction</b>	Using this Document
<b>1.0</b>	<b>Lead DM</b>	Design Management Strategy DM Resources Pre-construction DM Audit Design Fundamentals DM Project Set-up Contacts Directory Organogram Reporting KPI's Planning of Asset Realisation Risk & Opportunity Design Audit
<b>2.0</b>	<b>Client</b>	Client related processes
<b>3.0</b>	<b>Systems, Protocols &amp; Tools</b>	Systems deployed and aligned Schedule of systems Control of Documentation and Data Schedule of Trackers (DM Project Set-up)
<b>4.0</b>	<b>ER's &amp; Contract</b>	ITT/Tender Documents Scope
<b>5.0</b>	<b>CP's</b>	CP schedule Process for Submission
<b>6.0</b>	<b>Site &amp; Surveys</b>	Survey Tracker (DM Project Set-up)
<b>7.0</b>	<b>Consultants</b>	Appointment strategy Appointment Tracker (DM Project Set-up) Appointments & Schedules CDM Resources Reporting
<b>8.0</b>	<b>Statutory &amp; Other</b>	Project se-up Dashboard Condition/Sign off Trackers
<b>9.0</b>	<b>Communication, Meeting Plan and Minutes</b>	Reporting Lines Meeting Plan
<b>10.0</b>	<b>Compliance</b>	Design & Development Review Design & Development Verification & Validation
<b>11.0</b>	<b>Stage &amp; Design Approvals</b>	By items

<b>12.0</b>	<b>RFI's &amp; TQ's</b>	RFI's TQ's
<b>13.0</b>	<b>Design &amp; Development Planning / Programmes</b>	Content List of Programmes
<b>14.0</b>	<b>Deliverables</b>	MIDP IRS CDE Squad Reviews Stage Reports Design Notes
<b>15.0</b>	<b>Change Control</b>	By items
<b>16.0</b>	<b>Quality</b>	Quality Objectives Quality Conformance
<b>17.0</b>	<b>VE/VM</b>	By items
<b>18.0</b>	<b>Design Issues</b>	By items
<b>19.0</b>	<b>Design Subcontractors</b>	Contractor Design Portions and specialist systems CDP list Supply Chain list Package Design Responsibility Scope/Package Interfaces Design Deliverables Tender Review Squad Review
<b>20.0</b>	<b>Hand-over &amp; Close out</b>	Soft Landing Information Hand-over BIM for O&M's