

# DESIGN LANGUAGE & DEVELOPMENT INTEGRATION IN KSA

Integrating Design Language in Saudi Arabia's Vision 2030 Development Projects



# Table of Contents

01	Introduction	3
02	Challenges in Design Integration	4
03	Solutions and Strategies ▼	5
	Development of the Alignment Matrix	5
	Procurement Strategies and Their Impact	13
04	Key Considerations for Design in KSA	19
05	Conclusion	24

# 01 Introduction



**Ian Sinclair**  
Head of P&DS KSA

The development and construction market in Saudi Arabia is the most ambitious in the world, driven by the country's Vision 2030 commitment to economic diversification, megaprojects, and infrastructure development. Critical to the success of this ambitious plan is Design, the associated language, and the integration and delivery of the same into the overall development cycle.

A handwritten signature in black ink, appearing to read 'Ian Sinclair'.

# 02 Challenges in Design Integration



In 2014 I led two significant lead design teams, one based in Abu Dhabi and another based in Madrid, with an integration role with the construction management team on site in Baku, Azerbaijan, working on a mega mixed-use project called the Crescent.



What we immediately recognized was the challenges around the 'language of design' in the context of many designers, design sub-consultants, specialist consultants, sub-contractors, contractors, and material suppliers, all moving forward from all parts of the globe and used to working with their standards, guidelines, and plans of work. They were struggling with the design language and design deliverables and alignment of them with design scopes linked to contracts, stages, procurement, construction contracts, and sequencing of them over different elements of the development namely, a Retail Mall, Residential & Commercial Towers, and a high quality 5 star plus unique Hotel.

# 03 Solutions & Strategies



## Development of the Alignment Matrix

Together with colleagues Dale Sinclair and Jennifer Dixon, we created a matrix that aligned the international design and project management standards to support and focus the wider teams on their deliverables and how the various key design and project management international standards align. The initial matrix was produced but we then added BSRIA<sup>1</sup> to the detailed version to align MEP Environmental, Architectural, Project Management and Civil Engineering disciplines.

<sup>1</sup> Building Services Research and Information Association, UK



# 03 Solutions & Strategies

## Comparison of selected International Plans of Work used in the Built Environment

Stage	Pre-Design			Design					Construction	Handover		In Use		End of Life
ACE (Europe)	0	1		2.1	2.2	2.3		2.4	3			4		5
	Initiative	Initiation	NOT USED	Concept Design	Preliminary Design	Developed Design	NOT USED	Detailed Design	Construction	NOT USED	NOT USED	Building Use	NOT USED	End of Life
SIA (Switzerland)	4.11	4.21	4.22	4.31	3.32	4.33	4.41	4.51	4.52	4.53		4.61	4.62	
	Definition of Needs	Project Definition Feasibility	Selection Procedure	Preliminary Project	Construction Project	Permit-obtaining Procedure	Tender	Construction Planning	Implementation	Commissioning Completion	NOT USED	Operation	Maintenance	NOT USED
AIA (USA)				-		-		-	-					
	NOT USED	NOT USED	NOT USED	Schematic Design	NOT USED	Design Development	NOT USED	Construction Documents	Construction	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED
APM (Global)	0	1		2		3		4	5	6		7		
	Strategy	Outcome Definition	NOT USED	Feasibility	NOT USED	Concept Design	NOT USED	Detailed Design	Delivery	Project Close	NOT USED	Benefits Realisation	NOT USED	NOT USED
RIBA (UK)	Strategic Definition	Preparation and Brief	NOT USED	Concept Design	NOT USED	Developed Design   Spatial Coordination	NOT USED	Technical Design	Construction	Handover & Close Out	NOT USED	In Use	NOT USED	NOT USED
Spain				-				-	-	-				
	NOT USED	NOT USED	NOT USED	Proyecto Básico	NOT USED	NOT USED	NOT USED	Proyecto de Ejecución	Dirección de Obra	Final de Obra	NOT USED	NOT USED	NOT USED	NOT USED
NATSPEC (Aus)		-		-	-	-		-	-			-		
	NOT USED	Establishment	NOT USED	Concept Design	Schematic Design	Design Development	NOT USED	Contract Documentation	Construction	NOT USED	NOT USED	Facility Management	NOT USED	NOT USED
NZCIC (NZ)		-		-	-	-		-	-			-		
	NOT USED	Pre-Design	NOT USED	Concept Design	Preliminary Design	Developed Design	NOT USED	Detailed Design	Construct	NOT USED	NOT USED	Operate	NOT USED	NOT USED
Russia				-	-	-		-	-					
	NOT USED	NOT USED	NOT USED	AGR Stage	Stage P	Tender Stage	NOT USED	Construction Documents	Construction	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED
South Africa		1		2	3	-		4	5		6			
	NOT USED	Inception	NOT USED	Concept and Viability	Design Development	NOT USED	NOT USED	Documentation & Procurement	Construction	NOT USED	Close Out	NOT USED	NOT USED	NOT USED

# 03 Solutions & Strategies

## Detailed comparison of selected International Plans of Work used in the Built Environment

Stage	Discipline	Pre-Design		Design				Construction	Handover	In Use
Project Stages		0	1	2	3	4		5	6	7
Stage Description				Concept Design	Developed Design	Construction Documents				
Association for Consultancy and Engineering (ACE Europe)		0	1	2.1	2.2	2.3	2.4	3		4
	Engineering	Initiative	Initiation	Concept Design	Preliminary Design	Developed Design	Detailed Design	Construction	NOT USED	Building Use
American Institute of Architects (AIA USA)		1	2	3	4	5		6 & 7	8	
	Architecture	Pre - Design	Site Analysis	Schematic Design	NOT USED	Design Development	Construction Documents	Construction	Post Construction	NOT USED
Association of Project Management (Europe)		0	1	2		3	4	5	6	7
	Project Management	Strategy	Outcome Definition	Feasibility	NOT USED	Concept Design	Detailed Design	Delivery	Project Close	Benefits Realisation
Royal Institute of British Architects (RIBA UK)		0	1	2	3	4		5	6	7
	Architecture	Strategy	Preparation and Brief	Concept Design	NOT USED	Developed Design   Spatial Coordination	Technical Design	Construction	Handover & Close Out	In Use
Building Services Research and Information Association (BSRIA UK)		0	1	2	3a	3b	4a, 4b, 4c	5	6	7
	Environmental   MEP	Strategic Activities	Data Appraisals	Outline Proposals	Main Plant Strategy	Schematic and DD model	Calculations, Technical, Procure	Construction	Handover & Close Out	In Use
Fee Split	Discipline	Pre-Design		Design				Construction	Handover	In Use
Full Design		Separate Appointment		20%	10%	30%	40%	Separate Appointment		
Design & Build		Separate Appointment		20%	10%	30%	By Contractor	Separate Appointment		---

# 03 Solutions & Strategies



Since the development of this initial alignment matrix in 2014, an updated version now appears in the Royal Institute of British Architects (RIBA) Plan of Work Overview 2020, page 9 with a summary as follows:

“Although each of these plans of work is different, they all have the same goals: to provide the project team with a road map for promoting consistency from one stage to the next, and to provide vital guidance to clients undertaking perhaps their first and only building project.”



# 03 Solutions & Strategies

## Comparison of International Plans of Work

Stage	Pre-Design		Design				Construction	Handover	In Use	End of Life
	0	1	2		3	4	5	6	7	
RIBA (UK)										
	Strategic Definition	Preparation and Brief	Concept Design	NOT USED	Developed Design	Technical Design	Construction	Handover & Close Out	In Use	NOT USED
ACE (Europe)	0	1	2.1	2.2	2.3	2.4	3		4	5
	Initiative	Initiation	Concept Design	Preliminary Design	Developed Design	Detailed Design	Construction	NOT USED	Building Use	End of Life
AIA (USA)			-		-	-	-			
	NOT USED	NOT USED	Schematic Design	NOT USED	Design Development	Construction Documents	Construction	NOT USED	NOT USED	NOT USED
APM (Global)	0	1	2		3	4	5	6	7	
	Strategy	Outcome Definition	Feasibility	NOT USED	Concept Design	Detailed Design	Delivery	Project Close	Benefits Realisation	NOT USED
Spain			-		-	-	-	-		
	NOT USED	NOT USED	Proyecto Básico	NOT USED	NOT USED	Proyecto de Ejecución	Dirección de Obra	Final de Obra	NOT USED	NOT USED
NATSPEC (Aus)		-	-	-	-	-	-		-	
	NOT USED	Establishment	Concept Design	Schematic Design	Design Development	Construction Documents	Construction	NOT USED	Facility Management	NOT USED
NZCIC (NZ)		-	-	-	-	-	-		-	
	NOT USED	Pre-Design	Concept Design	Preliminary Design	Developed Design	Detailed Design	Construction	NOT USED	Operate	NOT USED
Russia			-	-	-	-	-			
	NOT USED	NOT USED	AGR Stage	Stage P	Tender Stage	Construction Documents	Construction	NOT USED	NOT USED	NOT USED
South Africa		1	2	3	-	4	5			
	NOT USED	Inception	Concept and Viability	Design Development	NOT USED	Documentation	Construction	Close Out	NOT USED	NOT USED

# 03 Solutions & Strategies



When considering design language as part of the overall development integration, it is also important to understand how the development cycle is mapped out, sequenced, and overlapped. It is also important to understand where the typical gateways and control points for time, cost, risk, and quality sit within the framework of design through pre-concept, business case, master planning, asset design, procurement, and into construction. The diagram in the next page, sets out the overall development lifecycle and sequencing. This of course, can and will vary because of the development specifics, client business cases, and budgetary / time constraints but is presented without being exhaustive, as a guide to support the decision-making around design language and development integration.



# 03 Solutions & Strategies

## Project Lifecycle



## Environmental, Cultural Assessment, Strategy & Implementation

- ▶ Schedule
- ▶ Transportation Plan
- ▶ Urban Centers
- ▶ City Functionality
- ▶ Infrastructure Strategy
- ▶ Renewables Strategy
- ▶ Budget Costs
- ▶ Performance Standards
- ▶ Phasing & Logistics
- ▶ Surveys & Studies
- ▶ Land Use Analysis
- ▶ Economic Analysis

### 01 | Masterplanning

Concept  
Master Plan CMP

Detailed  
Master Plan DMP

### 02 | Asset(s) Design

Concept design  
**20%** Completion

Spatial design  
**50%** Completion

Technical design  
**90%** Completion

Technical Support  
**100%** Completion

### 03 | Construction

Early Works, Infrastructure &  
Long Lead Items Procurement

Asset(s) Construction  
Delivery Options: EPC, MC, Cost +, DBB

### 04 | Cost Strategy, Planning & Implementation (PPP, BOO, BOT)

PC Budget +/- **40%**

Concept Budget +/- **30%**

SD Budget +/- **20%**

TD Budget +/- **50%**

Contingency +/- **5:10%**

# 03 Solutions & Strategies



The **RIBA Design Matrix** is a significant step in aligning and integrating the 'language of design' into the development cycle, particularly in KSA, where we are driving toward a mature model but are not yet where we need to be. It is equally clear since the acceleration of the KSA Construction & Development market in 2015 that other essential key design-related issues need to be integrated into the cycle to ensure more efficient and effective delivery. Since the acceleration of the KSA construction and development market in 2015, other key design-related issues have emerged that need integration to ensure efficient and effective delivery.



# 03 Solutions & Strategies



## Procurement Strategies and Their Impact

One of the other significant factors impacting Design Language & Development Integration is **Procurement**; not only the procurement process / typology that is used to build but also the selection criteria, market appetite, development typologies, and the direct connection to design appointments, contracts, scopes, and deliverables. There is a direct correlation between how early and decisive procurement strategies critically affect how and when one contracts the designers to service this procurement strategy, and understanding how significant the impact of changing this strategy can affect the whole design, procure, and construction process and can create risk around time and cost-certainty. A primary requirement is to understand the key procurement options in KSA and plan for the variances with one's design contracts, stages, percentage of completion, and deliverables for the selected procurement typology to be effective. The diagram on the next page highlights the main procurement typologies utilized in KSA and their advantages and disadvantages without being exhaustive, and highlights hybrid models for specific situations if required.



For example, for a design and build procurement contracting option (D&B | LSTK), it would be efficient to contract a designer to deliver to RIBA Stage 3 to procure a contractor and consider a design guardianship reduced role to verify that the intent of the design is consistent through the technical design stage 4, shop drawings and during construction.



# 03 Solutions & Strategies

## Typical Procurement Options

### Option 01

#### Design and Build (DB | LSTK)

Time efficient, cost and risk profile aligned to quality of design / ER's, quality issues

### Option 02

#### Construction Management (CM)

Time efficient, cost and risk profile median level, quality efficient

### Option 03

#### Management Contracting (MC)

Time efficient, cost higher but risk profile better than CM, quality efficient

### Option 04

#### Cost Plus (CP)

Time very efficient, significant cost, quality and risk profile

### Option 05

#### Integrated (Partnering)

Time needed to get into contract median, collaborative contract suite needed, risk profile lower, better cost certainty and good quality through Incentivization and collaboration

### Option 06

#### Investment (DBFO | PPP | DBO)

*Applicable for infrastructure assets (Water, Power, Aviation)*

Time to get into contract prohibitive, cost commitment is longer term but fixed can be higher, particularly opex costs, risk transfer completely to contractor / consortia

### Option 07

#### Traditional (Design-Bid-Build | LSPB)

Time prolonged to construction start, but less risk and more cost certainty and better quality

# 03 Solutions & Strategies

The table on the next page suggests industry-recognized, tried and evaluated options for asset typologies and the procurement options thereon, however, this is a guide; there will be factors such as time, costs, certainty, and quality that may lead to selecting another procurement option. Ideally, this strategy should be in place principally as part of the business case approval for any development/assets, which then would provide the direction and level of engagement/deliverables needed from the various key design appointments, from pre-concept to master planning stages, into asset and infrastructure design through to procurement and construction.

Each asset typology and the selected procurement option will have a critical effect on the procurement of designers and the level of scope in the contracts to deliver efficiently. A typical example I have seen many times in KSA is clients insisting that the designers are contracted to deliver RIBA Stage 4 data but choose a Design & Build option to procure a contractor. This is inefficient for two main reasons: (1) the design takes longer to reach stage 4, and it is not necessary to go beyond stage 3 if we use the Design & Build (LSTK) procurement option; and (2) the cost of the design is effectively being paid for twice by the client, once from the designer and secondly from the selected contractors' design sub-consultant; better to retain the original designer as design guardian post-RIBA Stage 3 to protect the design intent and client.



# 03 Solutions & Strategies

## Forms of Procurement & Suggested Options

		<div> <span>● Highly recommended</span> <span>● Moderately recommended</span> <span>● Not recommended</span> </div>						
Typical Asset Typologies		EPC   Design & Build LSTK	Construction Management	Management Contracting	Cost Plus	Integrated	Investment	Traditional Design Bid Build   LSPB
1	Residential - Apartments mid range   low rise	●	●	●	●	●	●	●
2	Residential - Villas	●	●	●	●	●	●	●
3	Business   Commercial	●	●	●	●	●	●	●
4	Hospitality - 7 Star	●	●	●	●	●	●	●
5	Hospitality - 5 star	●	●	●	●	●	●	●
6	Hospitality - 4 star	●	●	●	●	●	●	●
7	Entertainment & Sports - Buildings	●	●	●	●	●	●	●
8	Infrastructure - Mixed Use Developments	●	●	●	●	●	●	●
9	Infrastructure - Mobility	●	●	●	●	●	●	●
10	Marine Areas - Buildings	●	●	●	●	●	●	●
11	Marine Areas - Civil Works	●	●	●	●	●	●	●
12	Utilities - Buildings	●	●	●	●	●	●	●
13	Utilities - Backbone	●	●	●	●	●	●	●
14	Iconic	●	●	●	●	●	●	●

# 03 Solutions & Strategies

Another critical factor in the alignment between design, procurement, and build is the level of design as a minimum that should be contracted by the client for the selected procurement strategy to assure the risk and quality of delivery by the contractor; the risks are apparent

## 01

If there is insufficient detail and time the contractor's price will increase and significant claims are likely

## 02

If the design is too detailed for the chosen procurement strategy it will push the time out, increasing inflationary issues into procurement, and the client will pay for design overall between consultants | contractors.



# 03 Solutions & Strategies

The table suggest the minimum level of design and procurement strategy for each asset typology, procurement strategy, and the percentage range of overall deign fees by stages. It should be noted that this is not exhaustive or definitive due to the unique requirements of every project, but it is a good overall guide.

## Minimum Design Level

Design Stages (RIBA)		2	2a	3	4
		Concept Design	Main Plant & Structural Strategy	Developed Design   Spatial Coordination	Technical Design (IFC Construction Docs)
Typical Full Design - Fee Split		20%	10%	30%	35%
Typical Design & Build - Fee Split		20%	10%	30%	
Asset Typologies					
1	Residential - Apartments mid range   low rise		D & B	CM   MC	CM   MC
2	Residential - Villas			CM   MC	CM   MC
3	Business		D & B	CM   MC	CM   MC
4	Hospitality - 7 Star				MC   TRAD
5	Hospitality - 5 star				CM   MC   TRAD
6	Hospitality - 4 star			D & B	CM   MC
7	Entertainment & Sports - Buildings			CM   MC	CM   MC   INV
8	Infrastructure - Buildings (community, schools, health etc.)			CM   MC	CM   MC   INV
9	Infrastructure - Mobility			D & B	INV
10	Marine Areas - Buildings		D & B	CM   MC	CM   MC
11	Marine Areas - Civil Works		D & B	D & B	
12	Utilities - Buildings		D & B	CM   MC	CM   MC
13	Utilities - Backbone		D & B	D & B	
14	Iconic				CM   MC   TRAD

# 04 Key Considerations for Design in KSA

When we understand the development cycle and asset mix, the business case, the procurement strategy, the design strategy as part of contracting designers within this framework, and the plan, the following list, while not exhaustive, will support and define efficient design delivery and overall programme progression and budgetary / time controls:

- ▶ Agree deliverables by stage in line with the design stages contracted, using RIBA | ACE | BSRIA as baseline requirements for each design stage.
- ▶ Where a hybrid stage approach has been agreed, document this using the baseline international design guidelines.
- ▶ Define the construction procurement strategy concept that the designers are working to, over assets as these may vary inside one appointment.
- ▶ Provide designers with clear target cost parameters for significant cost elements such as façade and confirm what the target costs are for, e.g., supply or supply and installation.
- ▶ Integrate detailed SMART KPI's into the designers' contracts to track performance.
- ▶ Agree upon an overall design team structure and project management plan with key supporting deliverables like stakeholder/permit management plan for delivery.
- ▶ Agreement on program criteria and reporting regime on delivery monthly and key delivery gateways and approval periods into the overall schedule.
- ▶ Requirements for LEED | Sustainability levels.
- ▶ Digital design management and delivery strategy, BIM, GIS, offshoring, software suite alignment.



# 04 Key Considerations for Design in KSA



The 'Design Assessment Criteria' table was developed as the basis of design KPI's for gigaproject contracts and provides a basis for all parties to track and measure design progression and quality. These KPI's should not be used primarily as a tool to reduce costs, as has been the case, but to assure quality and alignment in delivery.



# 04 Key Considerations for Design in KSA

## Design Assessment Criteria

1 Unacceptable 3 Satisfactory 5 Excellent

Sr.	Description	KPI	Calculation Method	Score Guide	Weight	Score	Overall Score
1	Schedule	Compliance with the agreed delivery schedule Design & Construction	Measure % change	1 = >10% delay 2 = >5% 3 = <5% 4 = On time 5 = >2.5% ahead	17.5%	3.00	0.53
2	Budget	Compliance with the agreed capital budget	% Cost Reduction vs Budget	1 = >10% exceed 2 = >5% 3 = >2.5% 4 = on budget 5 = Cost saving initiatives required	20.0%	4.00	0.80
3	Design Contract Deliverables	Compliance with the agreed design deliverables in the contract	% deliverbaes delivered at design stages	1 = >10% exceed 2 = >5% 3 = >2.5% 4 = 0 - 2.5% 5 = Compliant	7.5%	2.00	0.15
4	Design Quality	Number of significant comments per sub-mittal	(# of Comments per submittal relative to design non conformance)	1 = >15 2 = >10 3 = >8 4 = >4 5 = No comments	15.0%	3.00	0.45
5	Sustainability	LEED   Sustainability Criteria	(# of LEED   Sustainability Tracker Target Points for Selected Scoring e.g. PLATINUM)	1 = below target 2 = > -5 points 3 = On target 4 = > 5 points 5 = > 10 points	10.0%	4.00	0.40

# 04 Key Considerations for Design in KSA

## Design Assessment Criteria

1 Unacceptable 3 Satisfactory 5 Excellent

Sr.	Description	KPI	Calculation Method	Score Guide	Weight	Score	Overall Score
6	Buildability and safety in Design	Construction Buildability	(# of Comments per submittal)	1 = >15 2 = >10 3 = >8 4 = >4 5 = No comments	7.5%	3.00	0.23
7	Lifecycle	Effectiveness in operations	(# of Comments per design stage)	1 = >15 2 = >10 3 = >8 4 = >4 5 = No comments	5.0%	2.00	0.10
8	Authority Approval   Permit Process	Completeness, compliance and quality of submissions	(# of Comments per submission)	1 = >15 2 = >10 3 = >8 4 = >4 5 = No comments	5.0%	4.00	0.20
9	Design Compliance   Acceptance	Stage Gateway Design: Acceptance rate	(# of Stage design approved / # Total proposed)*100%	1 = 10% 2 = 20 % 3 = 40% 4 = 60% 5 = +80%	7.5%	4.00	0.30
10	Innovation	Number of practical innovation ideas	Innovation ideas per design submittal (listed as separate item per submittal)	1 = None 2 = >1 3 = >2 4 = >4 5 = >6	5.0%	3.00	0.15
					100.0%	3.30	

# 04 Key Considerations for Design in KSA



“Given the scale of the projects in the Kingdom of Saudi Arabia, the conceptual uniqueness of each project, and the unprecedented ambition of project owners, the specific contracting requirements differ across each design-led project and are also likely to evolve over time. Careful consideration of these changing requirements, and the prompt implementation of contractual arrangements in response to them, will play an important role in ensuring the successful completion of projects that will push the boundaries of architectural design – both regionally and internationally.”

White & Case LLP 2022.



# 05 Conclusion

To ensure the Design Language is fully integrated into the development cycle in KSA, there are several critical decisions to be made as early as possible in the process. By changing the dynamics of these during the development cycle, such as procurement methodology, it will significantly affect the criticality of budget, time, and quality. This document intends to present a broader palette of key industry guidelines, processes, and methodologies and how they overlap and impact each other to support informed decision-making, given that change and flexibility are key, given how market dynamics, regulations, finances can change and influence things through the development cycle.



We are what we repeatedly do.

**Excellence**, therefore, is not an act, but a **habit**.



This quotation from the philosopher Aristotle resonates with and drives the Project Management philosophy and approach developed by Knight Frank's Project & Development Services to assure excellence for clients in response to the recognized market issues in the delivery of Project Management & Development Services in KSA. It is a vision developed over the last 12 years from lessons learned by an expert team and significant investment thereon by Knight Frank.

**RESIDENTIAL  
TRANSACTIONAL SERVICES**

Dubai Prime  
Dubai Project Sales  
Interior Services  
International Project Sales  
KSA Project Sales and Marketing  
Mortgages  
Qatar Residential  
Exclusive Project Sales  
Private Office

**COMMERCIAL  
TRANSACTIONAL SERVICES**

Capital Markets  
Data Centres  
Industrial & Logistics  
Land Sales  
Occupier Strategy & Solutions  
Office and Retail Leasing

**ADVISORY AND  
CONSULTANCY SERVICES**

Building Consultancy  
Education Consultancy  
ESG Consultancy  
Food and Beverage Consultancy  
Healthcare Consultancy  
Hospitality Valuation and Advisory  
Hospitality, Tourism and Leisure Advisory  
Masterplan Advisory  
Plant and Machinery Valuation and Advisory  
Project & Development Services  
Property Asset Management  
Real Estate Strategy & Consultancy  
Research and Geospatial  
Residential and Commercial Valuations  
Retail Advisory  
Residential Consultancy

**Ian Sinclair**

Head of P&DS KSA

[ian.sinclair@me.knightfrank.com](mailto:ian.sinclair@me.knightfrank.com)

+ 966 11 289 0700