



## SECTION 4 CAPITAL COST, PROJECT SCHEDULE & PROCUREMENT

### Introduction

#### 4.1

Based on the design described in Section 2 and the site selected in Section 3, we now present the estimated capital costs for the National Stadium, an indicative project schedule and the different options available with respect to the procurement of design and construction services.

### Capital Costs

#### 4.2

The specific costs identified have been established following analysis of generic cost data obtained from stadia cost experts combined with the site and infrastructure specifics of this project. Where no specific information has been available, qualitative assumptions have been made. These costs reflect a state of the art Stadium comparable with the worlds finest facilities.

#### 4.3

We have also considered comparable costs for other major Stadiums. It is important to note, however, that because of the different ways in which this information is published, what is included in or excluded from the figures and the differing nature of all stadia, one is not always comparing like with like.

### Stadium Costs

The Stadium costs can be considered under Stadium specific costs and related infrastructure.

A.	Stadium Specific Costs	<u>IR£m</u>
A.1	80,000 Seat Stadium	144
A.2	Fit Out & Facilities	16
A.3	Site Infrastructure (note 1)	<u>8</u>
		168

#### 4.4

The Stadium capital costs comprise the three elements in Table 1A. Other costs would include professional fees (to be subject to tender but approximately 10%) and local access infrastructure costs which are estimated at IR£13 million. In addition it is prudent to assume a design contingency of up to 20% of the Stadium capital costs. The access infrastructure relates to those elements of infrastructure that are not included in the Fingal County Council Area Development Plan.

**Note 1: Includes relocation costs of two buildings elsewhere on site.**

**Note 2: All costs are as at August 1999 base date and exclude Value Added Tax.**

## Cost Commentary

The approximate breakdown of 80,000 Stadium costs is as follows:

	<u>IR£m</u>
Site Preparation	3.94
Substructure	16.52
Frame and Upper Floors	28.25
Lift Shafts and Escalator Opes	5.53
Roof	21.76
External Envelope	17.34
Internal Accommodation	16.58
Pitch	1.53
Bowl Fittings	3.17
M&E Services incl BWIC	<u>29.38</u>
<b>Amount for Stadium</b>	<u>144.00</u>

The following is a brief description of what is included under each heading above:

- Site Preparation                      Excavate and fill site; ground stabilisation; retaining walls; divert existing services.
- Substructure                              Piled foundations; underground drains; lift pits; water disposal; service basement & tunnels.
- Frame and Upper                          FloorsMain structure; fire protection; precast floors; roof masts; terracing; players tunnel; TV gantries
- Lift shafts and Escalator opes              Lifts; lift shafts; escalators; staircasing and balustrading
- Roof    Structural steel; roof covering incl. rainwater disposal; roof access
- External Envelope                          Stadium envelope; glazing allowance; escape doors; turnstiles; shutters; private box glazing
- Internal Accommodation                      Internal blockwork & doors; signage; internal wall, floor and ceiling finishes; public toilets
- Pitch    Including dugouts; pitch perimeter; tunnel
- Bowl Fittings                                  Public, press, club etc. seating; balustrading to bowl
- M & E Services incl. BWIC                      Mechanical & electrical installations; communication & protective services; builders work.

## A.2 Fit Out & Facilities

The following items are specifically included:

	<u>IR£m</u>
Sports Museum	2.88
Changing facilities	3.17
Restaurants & Bars (incl limited catering equip)	5.92
Disabled facilities	1.44
Shops, ticket offices etc	1.44
Media facilities, broadcasting suite, medical, stewards, etc	<u>1.15</u>
Amount for Fit Out & Facilities	<u>16.00</u>

### **A.3 Site Infrastructure**

The following items are specifically included:

- Site roads & services - access, perimeter & egress roads; hard & soft landscaping
- Site parking for cars & coaches - 7,000 & 400 respectively
- Provision has been made for the demolition and reconstruction of two existing facilities within the footprint of the Stadium location

### **Local Infrastructure**

The breakdown of the local infrastructure cost of £13 million is as follows:

	<u>IR£m</u>
(a) M50 Stadium Interchange	3.0
(b) Link Road:	
o Dunsink Lane (2.0km)	3.0
(c) Pedestrian Routes (2.0km)	1.0
(d) Bridges:	
o Road over Motorway (2 No)	
o Road over Tolka Valley (1 No)	
o Pedestrian over Canal (1 No)	
o Pedestrian over Tolka Valley (1 No)	4.0
(e) Railway Station	<u>2.0</u>
<b>TOTAL</b>	<b>13.0</b>

There are further local infrastructural improvements which are included in the current Fingal County Council Draft Development Plan. We estimate that the value of these works which will benefit the National Stadium, is IR£17m.

Other Buildings – Sports Campus	IR£m
Indoor Event Centre	40
Other Campus Facilities (Est.)	6
Professional Fees (10%)	<u>5</u>
	<b>51</b>

### **Indoor Event Centre**

This is an indicative construction cost based on a 15,000 seater similar facility in the UK which excludes athletics track

## Other Facilities

These are indicative construction costs only as limited design information was available. Items included are: Multi purpose halls, indoor tennis facility, sports science & medical centre.

## Comparative Cost Information

### 4.5

The following Comparative Cost information is provided as guideline data only, since the published cost data on Premier Stadia is issued in various formats and it is virtually impossible to ensure that these costs are on an *apples with apples* basis.

Stadium	Completion Date	Capital Cost IR£million	Capacity	Seat Cost IR£
Reebok Stadium, Bolton	1998	36	25,000	1,440
Cardiff Arms Park	1999	175	72,000	2,420
Stade de France, Paris	1998	278	80,000	3,475
Stadium Australia, Sydney	1999	240	80,000	3,000
Wembley (projected)	2003	250	90,000	2,778
Paul Brown Stadium, Cincinnati (projected)	2000	303	70,000	4,320
<i>National Stadium, Ireland</i>	<i>2003</i>	<i>217</i>	<i>80,000</i>	<i>2,712</i>

**Note: Capital costs translated in IR£ at July 1999 exchange rates. Accepting the reservations referred to, it can be seen that the National Stadium projected capital cost is within the mean.**

### 4.6

The primary design criteria which impact on the per seat cost are as follows:

- Stadium envelope
- Seat space, width, specification & variety
- Row depth
- Circulation aisle width & circulation space at "back of house"
- Sight lines

- Pitch size – range of sports played
- Turf selection
- Specification and range of corporate and hospitality facilities
- Specification and type of appended infrastructure, i.e., hotel, offices, etc.

---

## Indicative Project Schedule

### 4.7

The indicative project schedule for the National Stadium (excluding the campus) is shown in [Figure 4.1](#). The starting point for the schedule, as shown, is the point at which the Government makes a decision to proceed with the project.

### 4.8

The schedule will be heavily influenced by the procurement method chosen. In preparing this schedule, we assumed the construction management approach as this option was ranked as the most suitable. This is discussed later in this section.

### 4.9

A six month period has been allowed for the selection of a design and management team. This will include preparation of the brief, proposal preparation and tender analysis. The preliminary design, preparation of the Environmental Impact Statement (EIS), consultation with the public and interested bodies and the preparation of the planning application package will take approximately 5 months.

### 4.10

In preparing a project schedule, we have allowed for the planning application to be appealed to An Bord Pleanála. We have allowed for a 4 month appeal period, which may or may not be adequate. If planning is resolved within that 4 month period, it will allow construction to start approximately 18 months after the decision to proceed.

### 4.11

Detailed design will commence as soon as the planning application and fire safety certificate are submitted and will run for approximately 12 months. Construction can start while design is still in progress and as soon as planning approval and fire safety certificate have been secured. Construction will take approximately two and a half years, which is comparable to other major stadia around the world.

### 4.12

Based on the above approach, the overall schedule from decision to proceed to official opening is approximately 4 years. This period could be shortened if necessary, subject to the procurement strategy chosen facilitating a shorter schedule, and the use of an expeditious decision making process.

---

## Project Procurement Strategy

### Background

#### 4.13

In evaluating alternative procurement methods, the design and construction of the Stadium, with associated car parking and access are considered. The elements of the campus development are not considered as it is undecided whether they would be constructed at the same time as the Stadium or form part of a subsequent phase.

#### 4.14

If constructed at the same time, they should be incorporated into the overall procurement strategy adopted. If constructed at a later stage, then alternative strategies for that phase of the development can be considered.

#### 4.15

The nature of the "client" organisation (the organisation which will procure the design and construction services) is an important factor in determining the most appropriate procurement strategy. It is a decision for the Steering Committee or Government as to who should be the client organisation. This is covered in more detail in [Section 7](#) of the report.

#### 4.16

Another important consideration is the nature of the project which has a number of important features.

- **Large Complex Project:** The scale of this project is large by Irish standards. Few Irish contractors will have the necessary experience and capacity to handle the project as one large contract. It may be considered desirable that as many Irish contractors as possible should be in a position to tender for elements of this project.
- **Specialised Installations:** There will be a number of specialised elements namely;
  - Seating
  - Turf
  - Floodlighting
  - Sound/PA
  - Broadcasting facilities
  - General Fit Out
  - Catering Fit out

#### 4.17

The design team will want to have access to and input from specialists in these areas early in the design period to optimise the Stadium design to the highest and most up to date standards and to avoid late changes to accommodate specialist requirements. There should also be input from Stadium operations personnel during the design process.

#### 4.18

Other factors that a procurement strategy must adhere to are that it must:

- **Ensure the quality of the design and the quality of the construction.** This will be a high profile project where quality in all aspects is of paramount importance. Adequate control over all aspects of the project execution must be provided for.
- **Provide maximum contractual protection to the client, with value for money and minimum financial risk.**

- Allow the execution of the project to be completed in the optimum time scale.
- While companies from all EU countries will be eligible to compete for elements of the work, the strategy adopted should allow opportunities for as many Irish companies as possible in what will be a prestigious and high profile project.

## Procurement Options

### 4.19

The following are the possible procurement methods (detailed information relating to the procurement options is provided in [Appendix 4.1](#)):

- (i) Design and Project Management Team with single main contractor and nominated sub-contractors. (Traditional approach).
- (ii) Design and Project Management Team with construction management approach.
- (iii) Design and Project Management Team with management contracting approach.
- (iv) Design and build contractor.
- (v) Design, build and operate.

### 4.20

Options (i) to (iii) have a common theme in that the approach to design and construction are handled separately. Options (iv) and (v) differ in that design and construction are combined in one contract.

## Design and Project Management

### 4.21

In selecting and appointing a design and project management team, there are a number of approaches which can be adopted.

- a. Select a project manager and design consultants as a combined team. This approach has the benefit that the team are likely to have worked together before and will be in a position to execute the project as a single contractual entity from the client's perspective.

The team would include:

- Project Manager
  - Architect
  - Civil/Structural Engineer
  - Mech/Elec Engineer
  - Quantity Surveyor
- b. Select each member of the design and project management team individually and put them together as a team.
  - c. Select and appoint a project manager to take overall management and control of the complete project. Then have the project manager manage the selection of the design team either individually or collectively.

### 4.22

We would recommend Option (a) above as the preferred approach for the National Stadium, as the scale and complexity of the project will require a cohesive project team to execute it effectively. It is important that the design and management team have knowledge and experience of Stadium design and of large scale project management as well as a thorough knowledge of the Irish construction sector and the regulatory process in Ireland. In each case, the project manager would also be the construction manager.

#### 4.23

Of the five procurement methods mentioned above and detailed in [Appendix 4.1](#), the "Construction Management" procurement option would appear to be the option most conducive to a project such as the National Stadium, which will be both large in scale and complex in design. This approach can provide a very high level of price certainty subject to the project managers carrying out their role effectively.

#### 4.24

The final choice of procurement option will be influenced by:

- the level of resources and management time which the client will be able to deploy to overseeing the project;
- the need to protect against/ minimise the financial risk via a vis cost escalations;
- the need to have the Stadium completed within the optimum time period.

### Summary of Options

#### 4.25

The following table summarises the advantages and disadvantages of the various project procurement options identified.

**Figure 4.6**  
Summary of advantages and disadvantages of contract strategies

Project Objectives		Appropriateness of Contract Strategy in Meeting Project Objectives								
			Main Contractor		Construction Management		Management Contracting		Design & Build	
Parameter	Objective	Weighting	Marks	Weighted Marks	Marks	Weighted Marks	Marks	Weighted Marks	Marks	Weighted Marks
Schedule	Early completion	10%	2	.20	5	.50	5	.50	3	30
Cost	Price certainty before construction starts	12%	4	.48	3	.36	3	.36	4	.48
	Value for money	12%	4	.48	5	.60	3	.36	4	.48

Quality	Prestige level in design and construction	15%	4	.60	5	.75	4	.60	2	.30
Variations	Avoid prohibitive cost of change	8%	4	.32	5	.40	4	.32	2	.16
Complexity	Technically advanced or high complex building	8%	4	.32	5	.40	5	.40	3	.24
Responsibility	Single contractual link for project execution	6%	4	.24	2	.12	4	.24	5	.30
Professional Responsibility	Need for design team to report to client	8%	5	.40	5	.40	5	.40	1	.8
Risk Avoidance	Desire to transfer complete risk	8%	4	.32	3	.24	3	.24	5	.40
Damage Recovery	Ability to recover costs directly from the contractor	5%	4	.20	3	.15	3	.15	4	.20
Buildability	Contractor input to efficient design and construction to benefit client	8%	2	.16	5	.40	4	.32	5	.40
Total Weighted Marks				3.44		4.32		3.83		3.03
<p>Source: Adopted For Assessment of National Stadium Project based on CIRIA Guidance Note 36, 1992.</p> <p>Contract Strategy Selection for Major Projects.</p>				<p>Key: 1 Least Suitable 5 Most Suitable</p> <p>Note that parameters have differing weightings.</p>						