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# Introduction

## Project Background

Project management transforms ambitious visions into tangible realities by orchestrating complexity with structured precision in the construction industry (Dagou *et al.*, 2024). Established in 1898, Birmingham United Football Club (BUFC) exemplifies this principle as it embarks on replacing its ageing 25,350-seat New Park Road Stadium, originally constructed in 1937 and partially redeveloped in 1992. The stadium's rebirth represents a strategically critical investment for the organisation's long-term financial stability and competitive aspirations (Patanakul and Shenhar, 2012). The project embodies a deliberate alignment between infrastructural modernisation and the club's broader strategic objectives (Svejvig and Andersen, 2015). Table 1 below introduces the key stakeholders within and outside the organisation and their involvement in the project.

**Key Stakeholders**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Name** | Andrew Hil-Norton | Edward King | Colin Entwistle | Peter Dillon | Rachel Connor | Brian Goldman | Hector Gonzalez | Richard Morello | Helen Archibald | Quentin Lamont | Antonia Boyd | Jim Foster |
| **Role** | Chairman | Board Member | Chief Executive | Project Director | Finance Director | Operations Director | Team Manager | Main Contractor | Head of Design | Local Residents | Banker | Supporters Association |
| **Involvement in Project** | N/A | N/A | 1. Project Steering Committee 2. Contract Signatories | 1. Project Steering Committee 2. Risk Committee | 1. Project Steering Committee | N/A | N/A | 1. Risk Committee 2. Contract Signatories | 1. Risk Committee | N/A | 1. Contract Signatories | N/A |
| **Short Description** | Owns 45% of the club and wants the stadium to reflection the club's ambition | Former BUFC player, owns 8% of the company and is a lifelong fan of the club | Aims to deliver project success to enhance prospects at a bigger club | Leads the stadium project balancing commercial pressures | Monitors the business plan and project cost indicators | Manages operations and prefers stadium capacity under 35,000 | Leads football decisions, with limited executive involvement | His firm will build the new stadium | Leads the design team, aligning with project vision. | Some neighbour concerns arose; the club aims to minimise negative publicity | Our bank liaison. She is concerned about builder contract terms. | Supporters Chairman, and is vocal about the stadium and influential. |

*Table 1: Key Stakeholders (Source: Author)*

## Project Relevance

The relevance of the project is crucial for renewing BUFC's infrastructure, enhancing fan engagement, and cementing the club's position among England's football elite. Strategic alignment theory critically emphasises that project success is maximised when initiatives are directly tethered to overarching organisational goals (Hornstein, 2015). For BUFC, the new stadium represents a pivotal investment to drive matchday revenues, commercial expansion, and brand elevation.

## Main Challenges

The primary challenge lies in delivering the project within stringent time constraints which requires completion within 24 months to avoid substantial financial penalties of £600,000 per month. Simultaneously, the budget must be maintained below £50 million. In addition to these financial and temporal demands, the complexity of stakeholder management is heightened by the diverse and, at times, conflicting interests of key groups, including shareholders, bank financiers, local residents, and the supporters' association. The multidimensionality of stakeholder engagement in projects of this magnitude demands proactive and continuous communication strategies (Laursen and Svejvig, 2016).

## Project Management Considerations

The development of a new stadium is underpinned by the comprehensive integration of key project management knowledge areas consisting of cost management, schedule management, risk management, and stakeholder engagement (Project Management Institute, 2021). Consequently, the New Park Road Stadium project exemplifies the intricate interplay between strategic intent, project execution, and stakeholder satisfaction in contemporary project management practice (Anantatmula and Rad, 2018).

**Simulation Results**

| | Date of Report | Completion Date | Total Price | Year 1 Profit | Year 2 Profit | Stakeholder score (-100 to +100) | Match attendance | Ordinary ticket price | Corporate box price |
|---|---|---|---|---|---|---|---|---|---|
| WORKSHOP team#3 | NA | End of Month 24 | 49,171,460 | 6,138,792 | 6,138,792 | 39 | 32,600 | 30 | 2,500 |

*Figure 1: Simulation Result Screenshot (Source: Author)*

Figure 1 displays the simulation results, which indicate successful delivery within both the prescribed time frame and budget constraints, further underscoring the importance of disciplined project governance and adaptive decision-making frameworks (Rahaman *et al.*, 2024).

# Task 1: Key Findings from Simulation

Evaluation of project success increasingly depends on understanding how projects manage scope, time, cost, quality, and stakeholder satisfaction (Albert, Balve and Spang, 2017). The simulation results offer critical insights into these dimensions, highlighting key lessons in project execution discussed below.

## 1. Managing Stakeholder Expectations: Accepting Dissatisfaction to Achieve Project Goals

One of the most significant findings from the stadium simulation project was that it is not possible to satisfy all stakeholders equally while ensuring project success (Davis, 2014). Freeman's Stakeholder Theory emphasises the necessity of managing competing stakeholder interests, along with the Salience Model which argues for prioritising stakeholders based on their power and influence (Fassin, 2010).

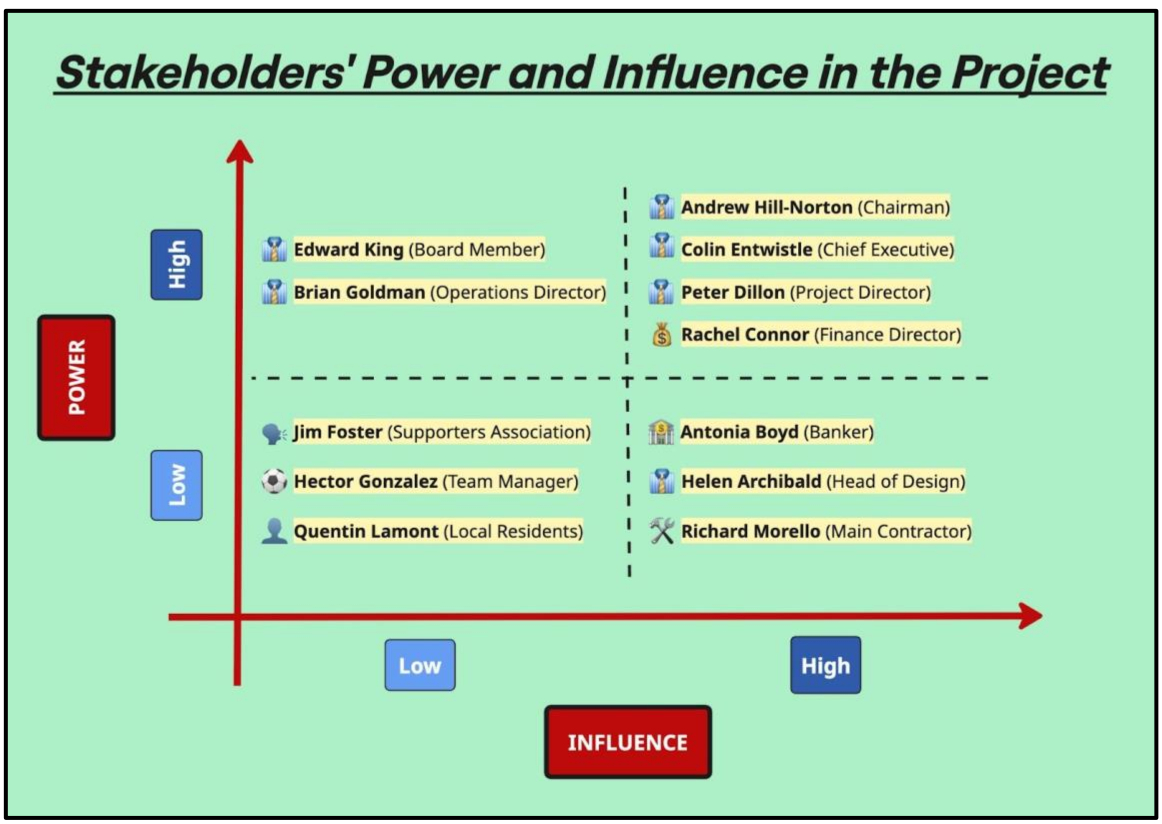



*Figure 2: Stakeholder Analysis Chart (Source: Author)*

Using stakeholder analysis (Figure 2) to assess the relative power of each stakeholder in BUFC and their influence in the project, our team strategically focused on satisfying those with high power and high influence (Brugha and Varvasovszky, 2000). As shown in Figure 3 below, these key individuals expressed high satisfaction (++), reflecting the effectiveness of our engagement strategies, including monthly and bi-monthly meetings throughout the project lifecycle (Ngampravatdee *et al.*, 2023).

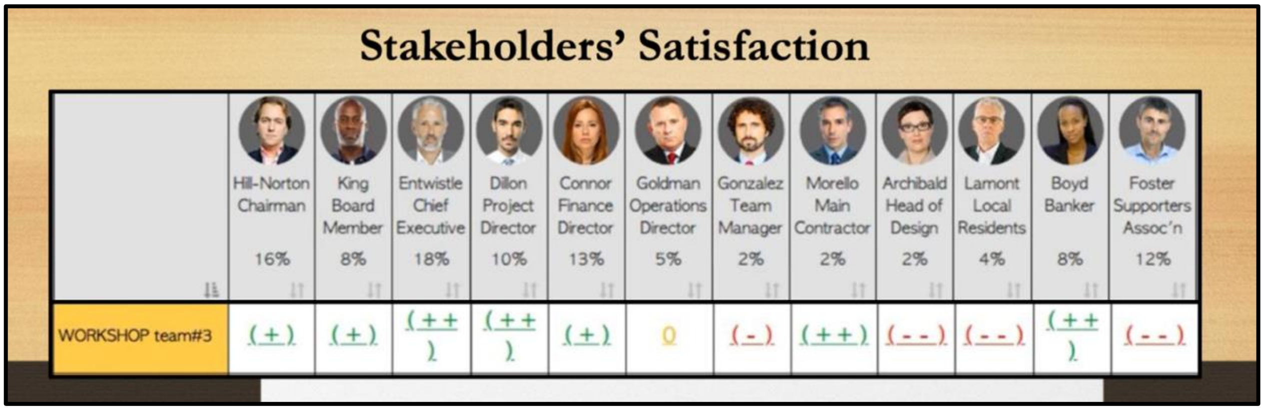


*Figure 3: Stakeholders' Satisfaction Result Screenshot (Source: Author)*

Conversely, stakeholders with lower power and influence, such as the Supporters Association and Local Residents, expressed dissatisfaction (--) because engagement with these groups was deprioritised. While this led to minor reputational concerns, the project was successfully delivered within 24 months and in less than £50 million. This outcome supports the practical realities which advocate for focused stakeholder engagement aligned with project constraints and strategic goals (Project Management Institute, 2021).

The simulation demonstrated that effective stakeholder management relies on strategic prioritisation and communication, not universal satisfaction, to balance project dynamics without compromising time, cost, or quality (Dugbartey and Kehinde, 2025).

## 2. The Importance of Proactive Risk Mitigation for Project Stability

Our simulation experience demonstrated that proactive risk mitigation is essential for ensuring project stability and safeguarding critical outcomes (Brady and Davies, 2010).

| Description of risks and their final status | | | | | | |
|---|---|---|---|---|---|---|
| **Risk** | **Probability** | **Financial Impact** | **Operational Impact** | **Stakeholder Concern** | **Overall Consequence** | **Final Risk Status** |
| **R01** (Demolition subcontractor unavailability) | High | Project delay (cost implication > £600k/monthly) | Major operational disruption | High concern from Project Director/Stakeholders | High | Resolved |
| **T19** (Recycling objection risk) | High | £200k cost increase | Minor operational impact | Moderate concern (limited to environmental groups) | Medium | Happened |
| **T16** (Concrete supply delay) | Moderate | Up to £400k cost increase and 1 month delay | Major operational disruption | High concern from stakeholders | High | Resolved |

*Table 2: List of risks (Source: Author)*

Table 2 lists 3 of the 38 risks from the simulation and will help us discuss as we further dive into this key finding.

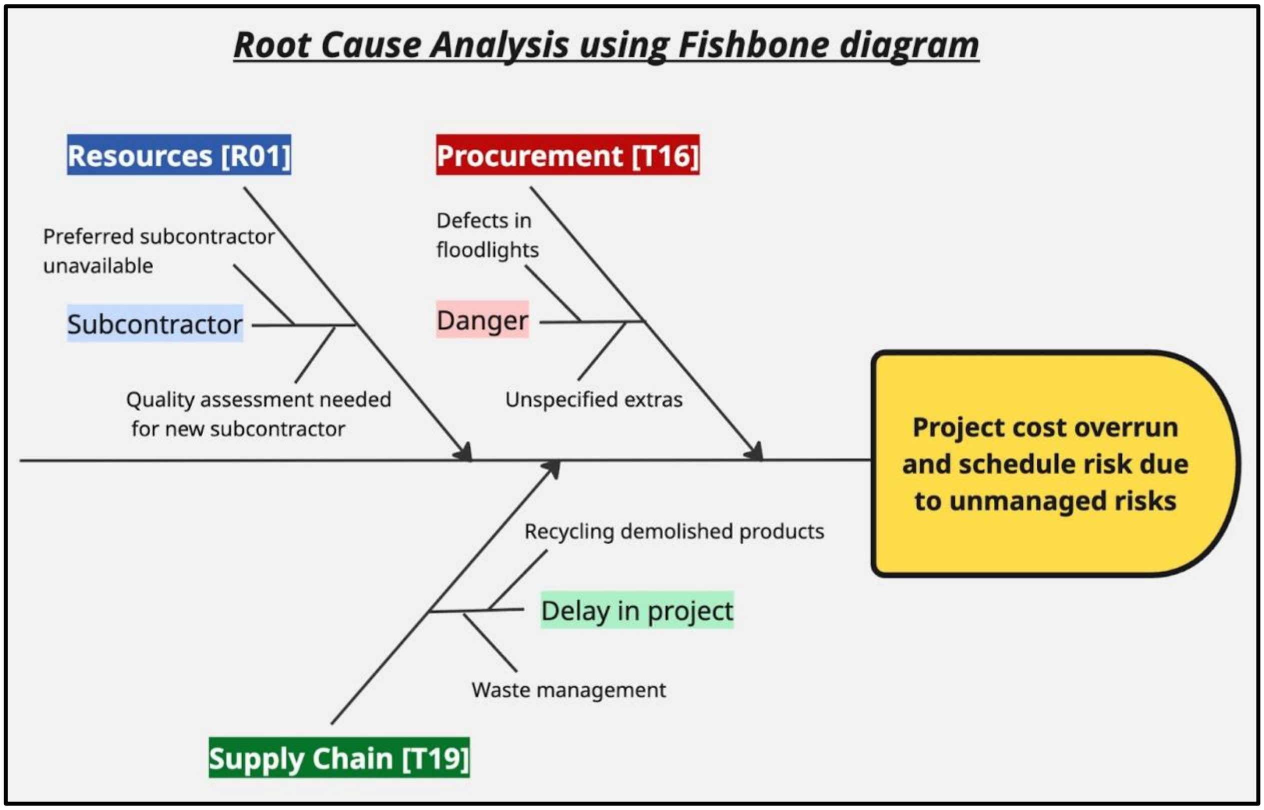



*Figure 4: Root Cause Analysis on risks (Source: Author)*

Figure 4 shows how Root Cause Analysis played a pivotal role by allowing us to uncover underlying vulnerabilities such as subcontractor unreliability, supply chain fragility, and environmental compliance risks (Latino, Latino and Latino, 2019). This approach demonstrated a departure from simplistic reliance on 3x3 probability-impact matrices, which are unsuitable for complex projects of this scale (Acebes *et al.*, 2024).

| Relating Actions to PACED Principles | |
|---|---|
| **Principle** | **Description** |
| Proportionate | Acting first on the risks that could destabilize the timeline and increase cost |
| Dynamic | Carefully analysing the trade-offs of acting versus not acting, and adjusting responses as new risks emerged |

*Table 3: PACED principles (Source: Author)*

Following the Root Cause Analysis, Table 3 demonstrates how we emphasised on two of the key PACED principles to help us mitigate risks (Hopkin, 2018).

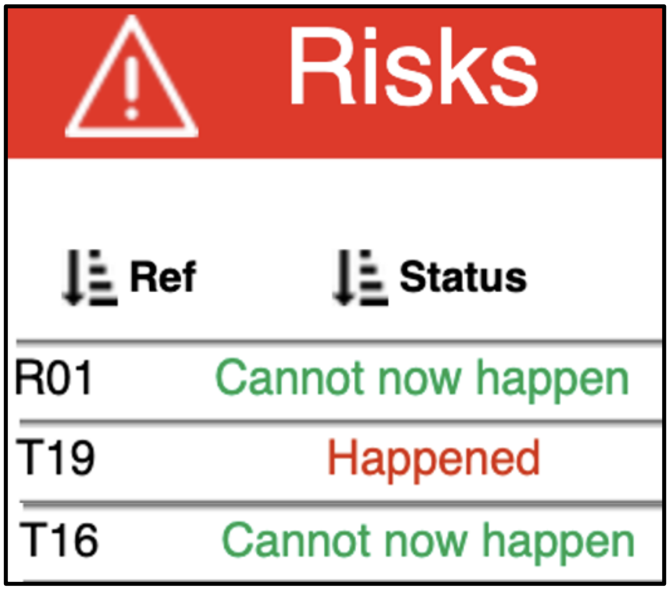


*Figure 5: List of risks and their final status (Source: Author)*

Figure 5 shows that the risk concerning demolition subcontractor availability (R01) was proactively mitigated through early replacement with DemolitionCo3, ensuring critical demolition works commenced without delay and achieving cost savings. On the other hand, the recycling of demolition waste risk (T19), though highly probable, was reactively managed because we planned to deal with other risks with higher impact. Due to the absence of proactive measures, the risk materialised, resulting in a £200,000 cost increase (Haji-Kazemi, Andersen and Klakegg, 2015). This reinforces the argument that even seemingly minor risks, if ignored, can impose financial penalties, underscoring the value of early intervention (Reason, 2000). In contrast to T19, the concrete supply delay risk (T16), despite only a moderate probability, was proactively addressed because the root cause analysis revealed its potential to disrupt critical path activities and incur a £400,000 loss.

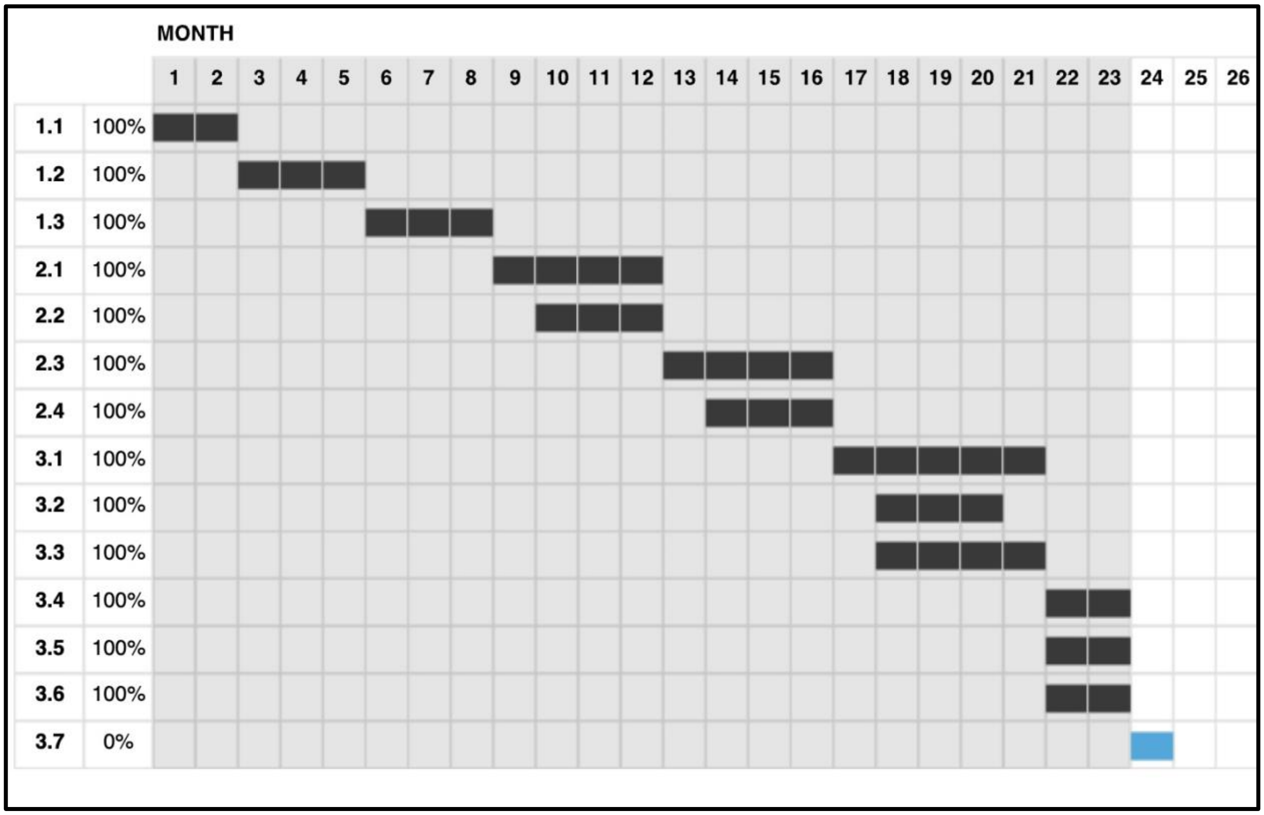
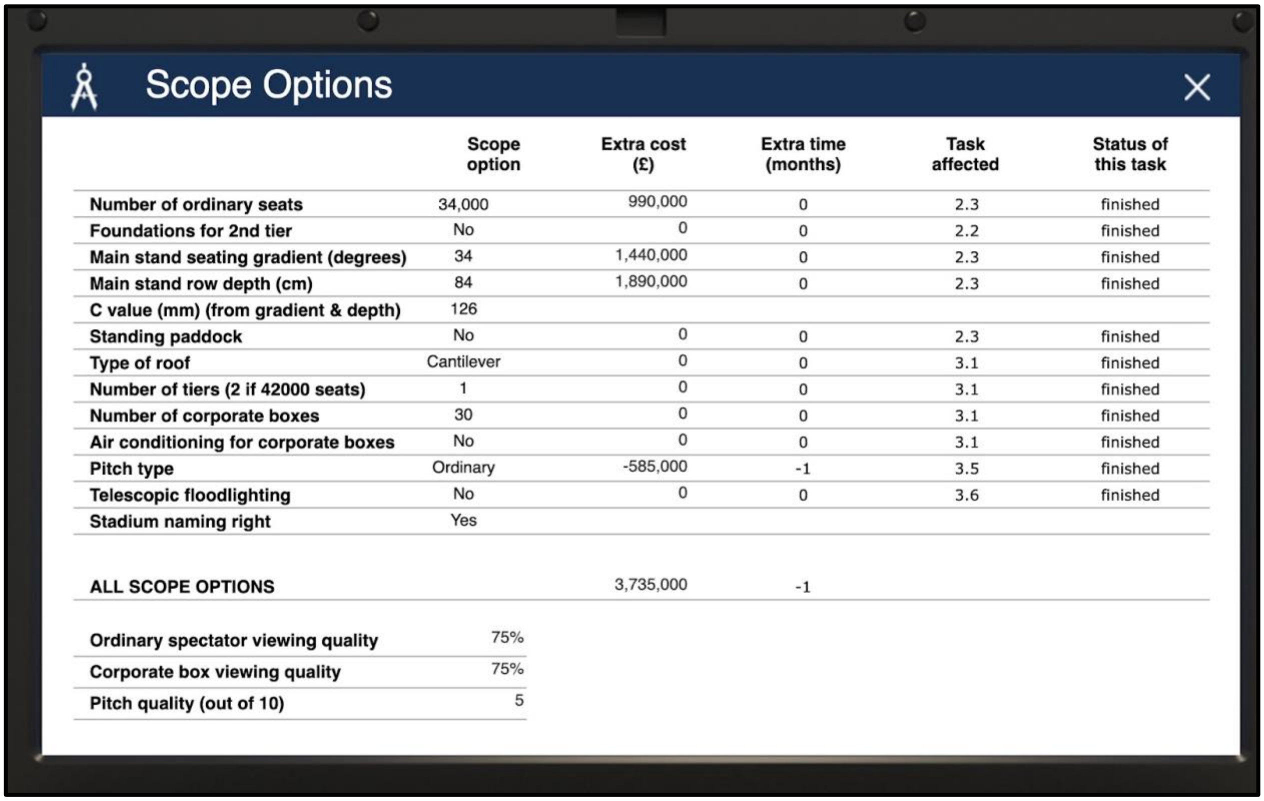



*Figure 6: Gantt Chart screenshot representing project timeline (Source: Author)*

Figure 6 displays the simulation Gantt chart and further explains that pre-emptive procurement actions safeguarded project timelines and demonstrated the necessity of proactive risk management for schedule-sensitive risks (Sabini, Muzio and Alderman, 2019). Ultimately, strategic risk management highlighted that proactive mitigation should prioritise timeline and cost risks, while selective reactive responses carried unavoidable financial consequences (Perrow, 2011).

## 3. Adjusting to the volatile nature of Project Scope

Scope management emerged as a critical pillar of success in the simulation, affirming that project scope is not static but constantly evolves in response to emergent conditions (Andersen, 2014). Scope defines the boundaries of a project's deliverables, but real-world execution reveals inevitable shifts (Butt, Naaranoja and Savolainen, 2016).



Scope Options

| | Scope option | Extra cost (£) | Extra time (months) | Task affected | Status of this task |
|---|---|---|---|---|---|
| Number of ordinary seats | 34,000 | 990,000 | 0 | 2.3 | finished |
| Foundations for 2nd tier | No | 0 | 0 | 2.2 | finished |
| Main stand seating gradient (degrees) | 34 | 1,440,000 | 0 | 2.3 | finished |
| Main stand row depth (cm) | 84 | 1,890,000 | 0 | 2.3 | finished |
| C value (mm) (from gradient & depth) | 126 | | | | |
| Standing paddock | No | 0 | 0 | 2.3 | finished |
| Type of roof | Cantilever | 0 | 0 | 3.1 | finished |
| Number of tiers (2 if 42000 seats) | 1 | 0 | 0 | 3.1 | finished |
| Number of corporate boxes | 30 | 0 | 0 | 3.1 | finished |
| Air conditioning for corporate boxes | No | 0 | 0 | 3.1 | finished |
| Pitch type | Ordinary | -585,000 | -1 | 3.5 | finished |
| Telescopic floodlighting | No | 0 | 0 | 3.6 | finished |
| Stadium naming right | Yes | | | | |
| ALL SCOPE OPTIONS | | 3,735,000 | -1 | | |

| | |
|---|---|
| Ordinary spectator viewing quality | 75% |
| Corporate box viewing quality | 75% |
| Pitch quality (out of 10) | 5 |

*Figure 7: Final Scopes screenshot (Source: Author)*

Figure 7 shows the final scopes, as our experience corroborates that large projects encounter dynamic scope evolution rather than rigid adherence to initial plans (Aaltonen and Kujala, 2016).

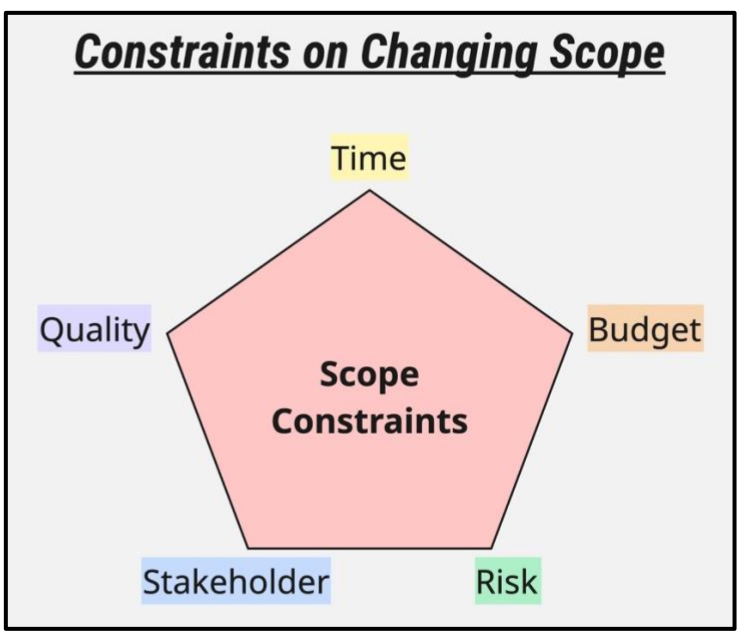



*Figure 8: Scope Constraints (Source: Author)*

Figure 8 shows 5 scope constraints of the simulation:

A. **Time:** According to our Critical Path Analysis (Figure 9), we targeted a 23-month completion, but the project ultimately required 24 months, adapting to schedule pressures with stakeholders to confirm the number of seats (34,000).

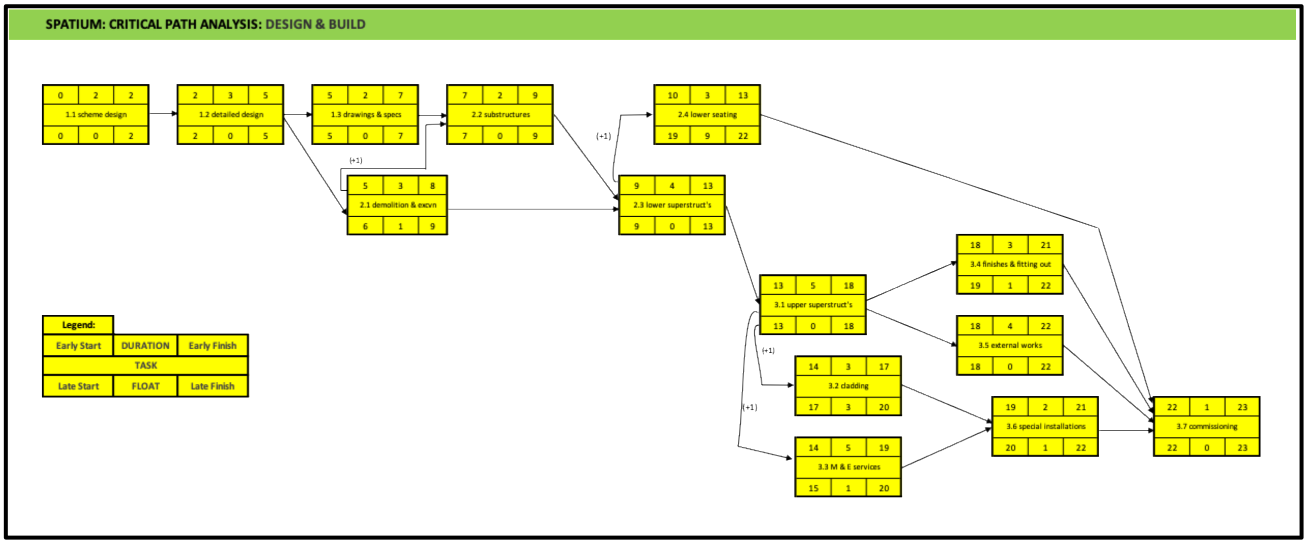



*Figure 9: Critical Path Analysis before starting the simulation (Source: Author)*

B. **Budget:** Figure 10 shows how cost increased the envisioned £45.3 million to £49.1 million, prioritising high seating quality of 75% and a 34.2% increase in number of seats.

| | |
|---|---|
| **Target price** | 45,385,000 |
| **Total cost undershoot (-ve) overshoot (+ve) adjustment** | 2,586,460 |
| **Client overhead** | 1,200,000 |
| **Liquidated damages reduction in price** | 0 |
| **TOTAL PRICE** | 49,171,460 |

*Figure 10: Target Price vs Final Price (Source: Author)*

C. **Risk:** Risk responses necessitated material substitutions (Macek and Vitásek, 2024). For instance, to accommodate proactive high-impact risk mitigation costs, the cheaper Cantilever roofing was built.

D. **Stakeholder:** Stakeholder engagement further shaped scope as their feedback deprioritised premium GrassPro4 pitch type, allowing a shift to ordinary pitch type without dissatisfaction (Watson *et al.*, 2018).

E. **Quality:** Quality preservation also demanded scope trade-offs, prioritising high seating quality of 75% by setting the highest c-value, row depth, and gradient to enhance user experience (Bartke and Schwarze, 2015).

These iterative scope adjustments demonstrate that rigid scope fixation is impractical under dynamic project constraints (Ajmal, Khan and Al-Yafei, 2019). Successful delivery required flexible change management and continual trade-off reassessment, with scope management focused on navigating changes to preserve value and project integrity (Davis, 2018).

# Task 2: Methodological Fit Analysis

Choosing an effective project management methodology is fundamental to delivering complex construction projects successfully (Amoah, Berbegal-Mirabent and Marimon, 2021). Traditional construction initiatives, such as stadium developments, often align with the Waterfall method due to their linear task sequences and relatively stable requirements (West, 2018). Meanwhile, Agile methodologies offer critical flexibility, enabling projects to accommodate evolving needs and stakeholder inputs (Prica and Bjelic, 2025). Given the dynamics observed in the simulation, a Hybrid methodology emerged as the most suitable approach, which synthesises both Waterfall's structure and Agile's adaptability (Luca, 2022).

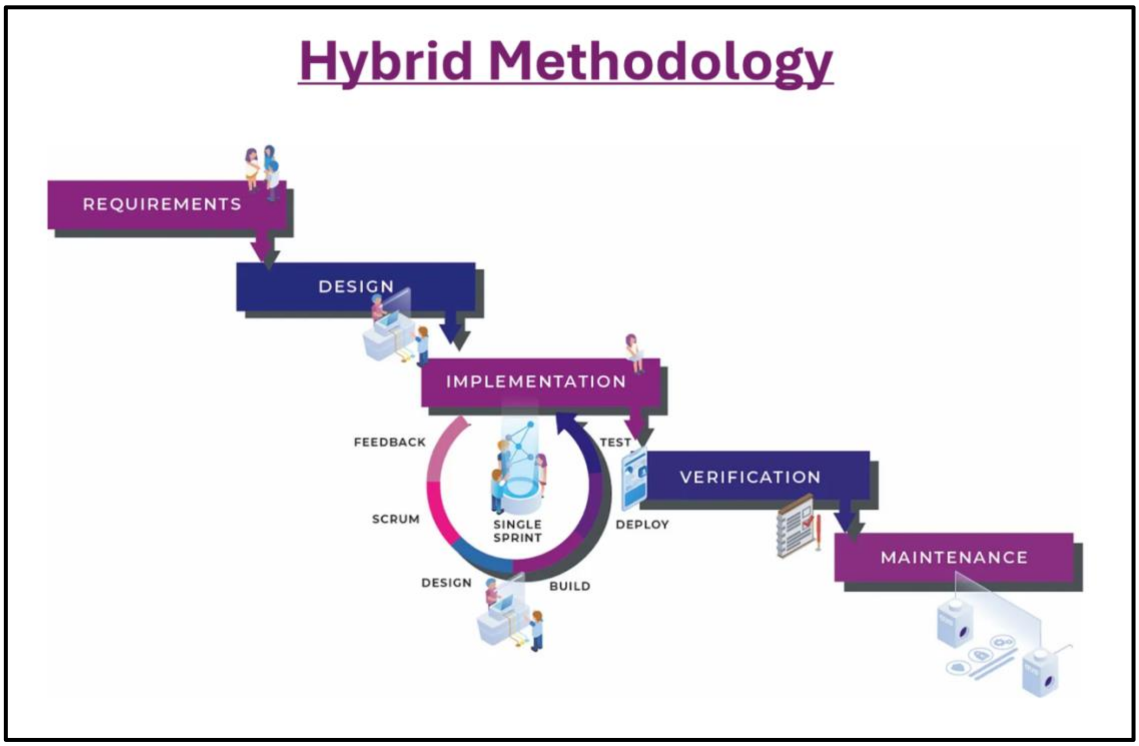



*Figure 11: Hybrid Methodology Diagram (Tan, 2019)*

Figure 11 shows the Hybrid methodology which proved advantageous by compartmentalising project phases according to their demands (Tan, 2019). Non-reversible construction activities, including demolition and substructure developments, were executed using Waterfall techniques to preserve the integrity of critical path activities. On the other hand, aspects such as adjusting seating capacity and finalising roof designs were managed with Agile methods, promoting stakeholder-driven modifications without jeopardising project milestones (Stankovic, 2020).

1. **Structured Task Sequencing and Planning:** The simulation reinforced the importance of meticulous early-stage planning (Li, 2024). Implementing a Waterfall-based Work Breakdown Structure (Figure 12) allowed detailed scoping, resource planning, and scheduling, particularly for irreversible construction tasks (Globerson, 1994).

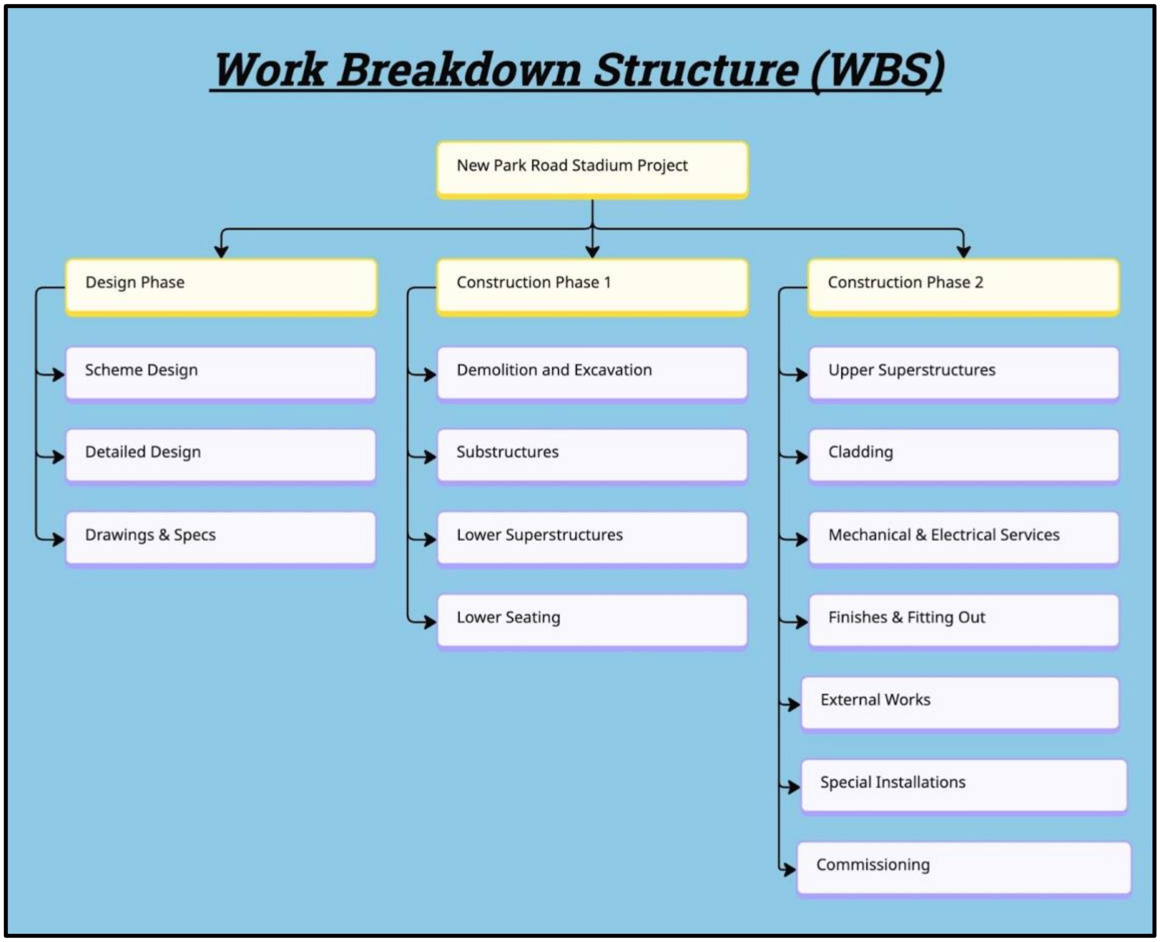
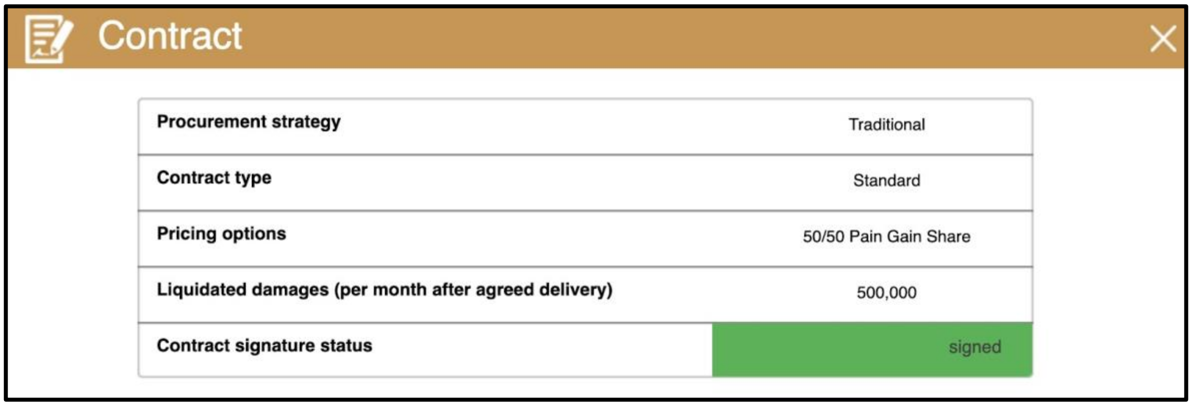



*Figure 12: Work Breakdown Structure (Source: Author)*

Rigid planning at this stage ensured that key dependencies, such as demolition and foundation works, proceeded without major disruptions (Kovács and Paganelli, 2003). However, maintaining agility in planning phases enabled flexible revisions before initiating physical works, ensuring a balance between control and adaptability (Sherehiy, Karwowski and Layer, 2007).

2. **Stakeholder Engagement and Adaptability:** The stakeholder management process during the simulation demonstrated the need for iterative communication and negotiation (García-Barrios, Speelman and Pimm, 2008). Initially, key stakeholders such as the Chief Executive and Project Director favoured a Fixed Price contract. However, the Main Contractor, also a key stakeholder, resisted this and advocated for a 50/50 Pain-Gain Share contract.



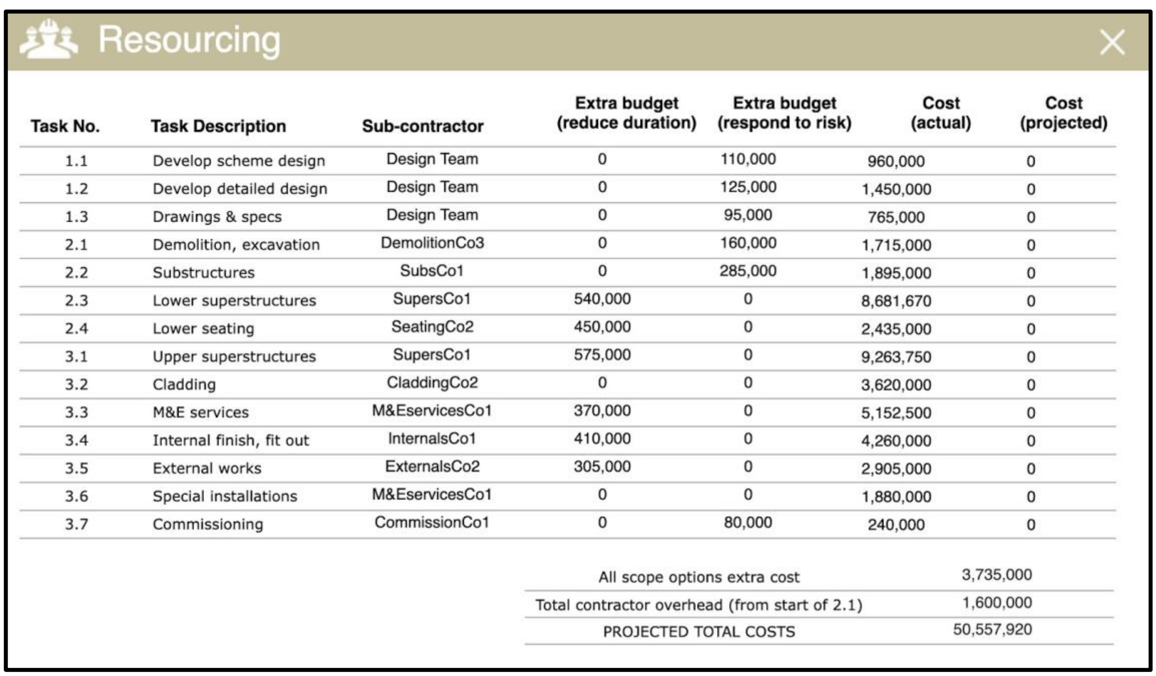
Contract

| | |
|---|---|
| **Procurement strategy** | Traditional |
| **Contract type** | Standard |
| **Pricing options** | 50/50 Pain Gain Share |
| **Liquidated damages (per month after agreed delivery)** | 500,000 |
| **Contract signature status** | signed |

*Figure 13: Signed Contract screenshot (Source: Author)*

Through iterative discussions, facilitated by Agile communication principles, a compromise was achieved where the 50/50 Pain-Gain contract was accepted alongside a £500,000 liquidated damages clause (Figure 13). This negotiation loop showcased the strength of Agile-based stakeholder engagement, ensuring that project relationships remained intact and achieved a stakeholder satisfaction score of +39 (Mahadevan, Kettinger and Meservy, 2015).

3. **Resource Allocation and Cost Management:** Initial subcontractor selections and cost management relied on Waterfall principles, allowing firm commitments and supporting the achievement of the project's success within the budget (Tanner and Willingh, 2014).



Resourcing

| Task No. | Task Description | Sub-contractor | Extra budget (reduce duration) | Extra budget (respond to risk) | Cost (actual) | Cost (projected) |
|---|---|---|---|---|---|---|
| 1.1 | Develop scheme design | Design Team | 0 | 110,000 | 960,000 | 0 |
| 1.2 | Develop detailed design | Design Team | 0 | 125,000 | 1,450,000 | 0 |
| 1.3 | Drawings & specs | Design Team | 0 | 95,000 | 765,000 | 0 |
| 2.1 | Demolition, excavation | DemolitionCo3 | 0 | 160,000 | 1,715,000 | 0 |
| 2.2 | Substructures | SubsCo1 | 0 | 285,000 | 1,895,000 | 0 |
| 2.3 | Lower superstructures | SupersCo1 | 540,000 | 0 | 8,681,670 | 0 |
| 2.4 | Lower seating | SeatingCo2 | 450,000 | 0 | 2,435,000 | 0 |
| 3.1 | Upper superstructures | SupersCo1 | 575,000 | 0 | 9,263,750 | 0 |
| 3.2 | Cladding | CladdingCo2 | 0 | 0 | 3,620,000 | 0 |
| 3.3 | M&E services | M&EservicesCo1 | 370,000 | 0 | 5,152,500 | 0 |
| 3.4 | Internal finish, fit out | InternalsCo1 | 410,000 | 0 | 4,260,000 | 0 |
| 3.5 | External works | ExternalsCo2 | 305,000 | 0 | 2,905,000 | 0 |
| 3.6 | Special installations | M&EservicesCo1 | 0 | 0 | 1,880,000 | 0 |
| 3.7 | Commissioning | CommissionCo1 | 0 | 80,000 | 240,000 | 0 |

| | |
|---|---|
| All scope options extra cost | 3,735,000 |
| Total contractor overhead (from start of 2.1) | 1,600,000 |
| PROJECTED TOTAL COSTS | 50,557,920 |

*Figure 14: Resources screenshot from simulation (Source: Author)*

However, when subcontractor DemolitionCo1 became unexpectedly unavailable, Agile became essential as our team rapidly revisited and redesigned the procurement plan, selecting DemolitionCo3 for Task 2.1 (Figure 14) to ensure continuity and lower investment (Anne, 2012).

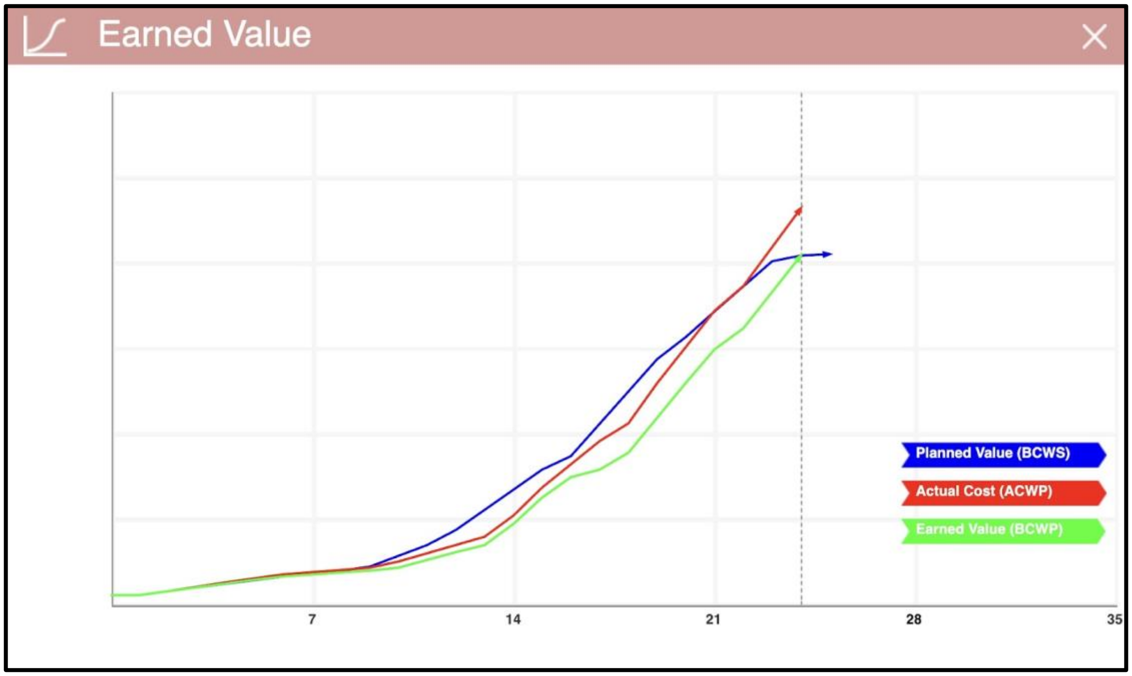


*Figure 15: Earned Value Management chart screenshot (Source: Author)*

Waterfall planning provided stability, while Agile responsiveness enabled quick, effective decision-making, while making sure the earned-value grows potentially with the actual cost (Figure 15).

4. **Risk Management:** Managing risks effectively requires a nuanced approach. Waterfall planning facilitated early identification of foreseeable risks such as material supply shortages and sequencing delays (Ali, 2023). However, Agile flexibility was critical when unexpected risks materialised, such as challenges with recycling demolition waste, which led to additional unforeseen costs (Pasławski and Rudnicki, 2021). Swift reallocation of disposals and replanning of tasks minimised the disruption. This dynamic approach ensured that the project maintained momentum and avoided cumulative schedule delays.

In summary, Waterfall provided structure and predictability for critical construction activities, while Agile enabled quick adaptation to evolving risks and stakeholder needs. By bringing them together, Hybrid methodology proved to be the best fit, balancing stability with flexibility and ensuring successful project delivery under challenging conditions (Bindal, 2024).

# Task 3: Reflection on the Simulation

The simulation of BUFC's stadium project revealed several good practices that I would adopt in future public and private sector projects.

## Good Practices to Adopt

1. **Risk Identification and Response Planning**

   Effective risk identification and response planning were integral to our project's success. Potential risks that could have led to delays were proactively mitigated through strategic resource allocation and early detection (Sheffi, 2015). This ensured completion within the stipulated 24-month deadline and under the £50 million loan cap. This approach is consistent as proactive risk management is essential for safeguarding stakeholder confidence and financial stability across both public infrastructure projects and private sector ventures (Beckers *et al.*, 2013).

2. **Close Monitoring and Control**

   Rigorous monitoring and control processes, particularly through the application of Earned Value Management (EVM), proved indispensable (Kim, Wells and Duffey, 2003). Continuous tracking of schedule and budget performance provided clear visibility into project health, which allowed for timely interventions and prevention of common issues of cost overruns, often referred to as "costs creeping" (Pühl and Fahney, 2011). In public projects, such transparency is vital to satisfy regulatory and taxpayer scrutiny, while in private projects, it ensures investor trust and profitability (Forstater, 2017).

3. **Active Stakeholder Engagement and Scheduling**

   Active stakeholder engagement and careful scheduling of meetings contributed significantly to project success (Shaukat *et al.*, 2022). By fostering robust relationships with board executives and key influencers and integrating their feedback consistently throughout the project lifecycle, stakeholder alignment was maintained (Derakhshan, Turner and Mancini, 2019). This approach aligns with Freeman's Stakeholder Theory, which underscores the importance of managing diverse stakeholder interests to secure project legitimacy and ensure successful outcomes (Stieb, 2009). Such engagement is indispensable in public projects, where political and community acceptance is critical, and equally vital in private ventures, where client satisfaction underpins future business opportunities and long-term partnerships (Bloomfield, 2006).

## Activities to Avoid

Despite these successes, several shortcomings highlighted critical areas for improvement.

1. **Underestimating Stakeholder Communication**

Underestimating stakeholder communication, particularly with local residents and the Supporters Association, resulted in dissatisfaction and a potential loss of community support. Ignoring external stakeholders can cause reputational damage in public projects and reduce brand loyalty in private ventures (Harrison and St. John, 1996). Future projects must adopt comprehensive stakeholder engagement plans that address all relevant groups.

2. **Losing Focus Over Minor Risks**

Losing focus over minor risks was costly. By overlooking design-related risks, we compromised the stadium's potential for award recognition—an important symbol of prestige. Even seemingly minor risks can escalate into significant strategic failures (Floricel and Miller, 2001). In public sector projects, such oversights could lead to political fallout; in private projects, they could affect brand image and long-term profitability (Kassel, 2016).

3. **Prioritising Budget and Time Over User Needs**

Stubbornness in prioritising budget and time over player experience, exemplified by the subpar 5/10 pitch quality, highlights a narrow focus that must be corrected (Arendt and Blaha, 2015). Successful projects, particularly in service industries like sports entertainment, require a holistic view of all stakeholder needs (Babiak and Kihl, 2018). In public projects, neglecting user needs undermines public value; in private projects, it diminishes customer satisfaction and future revenues (Reynaers, 2014).

# Conclusion and Critical Insights

The simulation experience offered beyond operational lessons, including strategic insights into navigating complex stakeholder ecosystems, managing emergent risks, and sustaining project value across dynamic project environments. The simulation emphasised that excellence in project management demands balancing scope, time, cost, quality, and stakeholder satisfaction—the key dimensions of the Iron Triangle (Atkinson, 1999). By internalising these lessons, I am better equipped to enhance the strategic success and societal value of my future projects, regardless of sector.

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