

Appendix 1



Nelson & Loudoun – Recladding Project

Procurement Option Report

January 2024

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Cardiff Council

Nelson & Loudoun – Recladding Project

Procurement Option Report

January 2024

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Executive Summary

The purpose of this report is to provide an overview on procurement routes available for the Nelson & Loudoun recladding project. Following an investigation by Cardiff Council (CCC) into the fire safety at Nelson & Loudoun high-rise tower blocks in 2019, a series of building fire safety improvements were recommended, this included the removal and reinstatement of the external 'non-compliant' cladding. Each tower requires re-cladding to meet legislative requirements, including the Building Safety Act, which came into force in October 2023. There is a desire to work with an approved contractor in a collaborative manner to overcome some of the design and logistical challenges faced by the project.

This report reviews the procurement options for the Nelson & Loudoun recladding project. The advantages, disadvantages, and risks of each option are appraised, and a recommendation made to CCC.

The method of examination included an overview of the JCT and NEC forms of contract, providing CCC with an understanding of the various functions of each form of contract and how each approach could be advantageous or a disadvantage to your brief.

Recommendations discussed include the provision of the following appointments:

- Procurement Route; Two-Stage Design & Build.
- Contractors Pre-Construction Contract for Nelson & Loudoun recladding project; Pre-Construction Services being delivered through a NEC PSC – Option A.
- Construction Contract for Nelson & Loudoun recladding project; NEC4 ECC – Option A.
- Technical Advisors Contract(s) for Nelson & Loudoun recladding project; NEC4 PSC – Option A contract for the Technical Advisory role on behalf of CCC.

1 Scope

1.1 Building Description and Background

1.1.1 Project Description

Nelson & Loudoun house comprises of two high-rise residential blocks, these were built c1960s and comprise of 16 storey blocks, Loudoun House has 120 number residential flats whilst Nelson House has 61 number flats approximately. The building is a reinforced 'no-fines' concrete frame with brickwork panels externally, it has historically been over-clad with a rain screen cladding system, the cladding has been removed from Nelson House. The recladding project consist of mainly external stripping, refurbishment and alteration works with associated MEP improvement works.

1.1.2 Project Background

Following the Grenfell Tower tragedy, Cardiff Council investigated the cladding installations at Nelson & Loudoun and following survey results commissioned a series of building and fire safety improvements. The immediate and appropriate response by CCC was to remove the existing at-risk and non-compliant cladding. Each tower therefore requires re-cladding to satisfy legislative and local requirements, including the Building Safety Act and this forms the basis of CCCs brief.

CCC initially appointed Atkins SNC Lavalin in September 2019 to undertake the initial RIBA design stages from 0-3, Mott MacDonald have been provided with a copy of the Atkins RIBA Stage 3 report, document reference: CATR-ATK-ZZ-RP-0003.

Please refer to the Project Execution Plan for more information.

1.2 Project Risks

The risks associated with the project can be found in Appendix A (Project Risk Register). These have been identified in collaboration with CCC and Mott MacDonald.

1.3 Understanding the Requirements

Having analysed the project information available to date, we have carefully considered the needs of the Client. We have used this information to structure our report to recommend the most appropriate procurement strategy. These requirements have been 'RAG' rated in terms of hierarchy of need. These key requirements being:

- **Quality:**
 - Works must be defect free upon Completion, there will be limited opportunity to rectify once the works are complete.
- **Legislative Compliance:**
 - Following the implementation of the Building Safety Act in October 2023, CCC require a design and a building that meets with this new legislation. A competent Contractor / Design Team is required to meet these requirements, as well as the 'Golden Thread' of information from inception through to handover.
- **Health & Safety / Fire Safety:**
 - CCC require the appointment of the Design team, Principal Designer and Contractor who has the necessary skills, experience, and competency to undertake this type of project. CCC will also need to comply with the Building Safety Act.

- **Clear Objectives and Leadership:**
 - To be cost effective, highly durable and low maintenance. The proposals must seek to optimise - efficiency of construction, best value of capital construction cost, efficiency in construction programme, energy efficiency and minimise carbon emissions.
- **Cost Certainty:**
 - A pre-set budget has been established and must not be exceeded. Spending profile is to be established and submitted for grant funding to WG.
- **Risk Transfer / Apportionment:**
 - A single building contract is preferable.
 - A desire to work in a collaborative way with the contractor to overcome any problems and disputes that may arise.
CCC may wish to retain some risks associated with the project, to mitigate price increases and uncertainty from the market.
- **Time:**
 - The buildings are occupied and require the construction works to be complete in a timely manner to maintain a good relationship with the in-situ tenants and leaseholders.
- **Design Development and Responsibility:**
 - As the design develops the degree of certainty increases in terms of the time to construct and the cost for doing so. The current design is at RIBA stage 0-1, the Client is open to a collaborative approach of developing the design in accordance with performance requirements.
 - The project must comply with the new Building Safety Act standards.
- **Specific Project Constraints:**
 - The client requires the ability to seek Contractor input into buildability issues, due to the available space onsite.
 - Keep live and operational services and infrastructure, which are serving the Residential Blocks.
- **Resident Management:**
 - CCC require the appointment of a contractor with experience of 'live' occupied buildings and construction sites, as well as residential management and co-ordination.
 - Phasing proposals and enabling works packages must balance the need to build economically and to minimise the disruption to the residents, as much as possible.
- **Community Benefits:**
 - Community benefits are delivered in a manner that will leave a lasting legacy to the catchment area of Butetown and immediately surrounding Council wards.
- **Knowledge Transfer/Lessons Learnt:**
 - Working collaboratively with the contractor will ensure that lessons learnt can be developed to produce snag free buildings.
- **Conflict Management:**
 - CCC would like to deliver the project in a collaborative context to avoid disputes and conflict where possible.

2 Procurement Options

2.1 Requirement Criteria

It is essential all parties involved, consider the various needs of the project to allow the most effective procurement route to be chosen. Consideration has been given to all routes to achieve the priorities in terms of:

- Time
- Quality
- Legislative Requirements
- Resident Management
- Cost
- Risk Transfer / Apportionment
- Design Development and Responsibility
- Specific Project Constraints
- Community Benefits
- Clear Objectives and Leadership
- Health and Safety / Fire Safety
- Ethics and Corporate/Social Responsibility
- Knowledge Transfer/Lessons Learnt
- Conflict Management

2.2 Procurement Options

While there are many different procurement strategies and forms of contract, the guidance provided in this report is focused on Design and Build and Traditional procurement methods, utilising either the NEC or JCT suite of Contracts, Mott MacDonald have not sought it necessary to review other forms of contracts.

2.2.1 Traditional Contract

The traditional contract involves the client appointing and retaining of own design team that will remain with the client throughout. Client design team will prepare full suite of design and tender documents to enable the selection of a contractor who is appointed to construct the project as per client design, for a fixed sum in a given period.

2.2.1.1 Traditional

Advantages

- Reduces or negates contractors risk premium (risk of design is with client).
- Competitive 'like for like' pricing, as all tendering contractors bid on the same basis.
- Direct reporting of design team to drive quality control.
- Good time and cost control due to a completed design prior to tendering.
- Continuity of design with no transfer of design responsibilities during the process.
- Allows the "client" extensive provision for implementation of change.

Disadvantages

- Overall project duration may be longer than other procurement methods, typically construction will not commence prior to the completion of the full and complete design.
- Client retains responsibility for the design except for any Contractor Design Portion (CDP) elements.
- Liability on clients consultant team to ensure accuracy and co-ordination of their design.
- No Early Contractor involvement.
- May lead to high levels of provisional sums and risk items on the client side.
- Extended programme to include full design.

2.2.1.2 Summary

The Traditional procurement method may mitigate some of the risks identified in the Nelson & Loudoun project, though this route may result in higher overall project costs and programme due to client owing the risk and responsibility for design. An element of design risk could be transferred to the Contractor through the provision of Contractor Design Portion (CDP). However due to the preference for transfer of risk, early contractor involvement and programme acceleration, the traditional procurement route has been discounted as a preferred option.

2.2.2 Design and Build

In a design and build procurement, the tender documents outlining the Scope are prepared by the Client or consultants appointed by the client. The Scope/Employers Requirements will include performance specification, programme, and contract terms. A single contractor is appointed (tender or direct award), who will deliver the Employers Requirements as outlined, employing their own design team. A Contractor can be appointed as early as RIBA Stage 1 and as late as during RIBA Stage 4. The contractor carries the risk of design development and programme during construction.

For Nelson & Loudoun, there are further considerations in respect of the technical design team. In this instance, Mott MacDonald would recommend CCC appointing and retaining their own Technical Advisor team to oversee the design development and its compliance with the Scope/Employers Requirements.

The alternative is where the client appointed design team would be novated across to the Contractor to continue with the design.

Design and Build can be undertaken as either a single stage or two stage procurement. The two-stage approach allows for a period of pre-construction design and procurement of packages by the Contractor before having to commit to a full construction contract.

2.2.2.1 Single Stage D&B

Advantages

- The client has to contract with only one party. The level of management and co-ordination necessary by the Client is considerably lower than other types of contracts.
- Price certainty is obtained before construction starts provided the employers requirements are adequately specified, and changes are not introduced.
- Less client design period required prior to appointment of a Main Contractor.
- Programme risk lies with the Contractor.
- Design can be carried out in favour of the Contractors own construction method.
- Contract obliges that contractor accepts responsibility for both design and construction.

Disadvantages

- May lead to a higher 'risk allowance' by Contractor in consideration of transfer of risk.

- Contractor delivers to a performance specification not full specification, so potential reduced control over material selection and quality.
- Potential lack of interest in the market as greater risk on the contractor.
Contractor bids can be difficult to compare like for like in the absence of fully specified materials and risk allowances will vary.

2.2.2.2 Two Stage Design & Build

Advantages

- Increased contractor involvement in design.
- Contractor buildability and construction site knowledge from an early stage.
- Degree of competition through pre-construction work package tenders.
- Ability to overlap design and tendering.
- Less client design time required prior to appointment of a Main Contractor.
- Programme risk lies with the Main Contractor.
- Design can be carried out in favour of the Contractors construction method.
- Design risks transferred to the Contractor from the Client.
- Contractor and supply chain involved in the design solution and hence “buy in”.

Disadvantages

- Client reliant on effectiveness of contractors supply chain to offer competitive prices during second stage, can leading to potentially higher build costs.
- Extended period required for analysis of Tender Returns to ensure Contractor’s proposals reflect Scope.
- Requires a robust set of Scope/Employers Requirements document.
- Cost savings by the Contractor to maximise profit, not passed on to client.
- Potential for client to lose their technical guidance in the absence of a separate TA appointment.
- Quality can be an issue due to lack of control over specification, Client may wish to appoint Supervisor/Clerk of Works to manage.

2.2.2.3 Summary

Design and build contracts offer the benefit of passing a significant amount of risk to the Contractor. Nelson & Loudoun may be consideration as a high-risk project. As such a fair balance of risk transfer will need to be adopted to incentivise the contractors as has been evidenced with earlier Expressions of Interest undertaken by CCC – there is limited interest from the market.

In consideration of the period lapsed since Atkins appointment, their RIBA Stage 3 design report and recent legislative changes, (the Building Safety Act); the revisiting of RIBA 0-1 ‘definition of brief’ has been discussed to be sure the ‘High Risk Building’ and associated requirements as defined by the Building Safety Act be incorporated into the Scope/Employers Requirements. The above advantages of a two-stage design and build and the programme advantages, inclusive of the ability for early contractor involvement, would appear the most advantageous route. Any concerns in respect of price, quality and compliance can be managed through pre-construction with the selection of an appropriate Contractor and the provision of a client retained Technical Advisor team to develop a robust tender pack and oversee the design development.

3 NEC or JCT

As noted above, there are many different forms of contract, and this report considers NEC and JCT forms only. CCC are very familiar with both as they are currently in use on both NPS and SEWTAPS frameworks managed by CCC.

Generally, JCT contracts are designed to allocate risk and assess variation without a ‘hands on’ conflict management procedures. Whereas the NEC requires greater collaboration between employer and client in resolving cost, quality, and time. NEC requires a significantly increased level of contract administration by all parties and a competent and suitably qualified Project Manager (acting on behalf of client) and Contractor is recommended when adopting NEC.

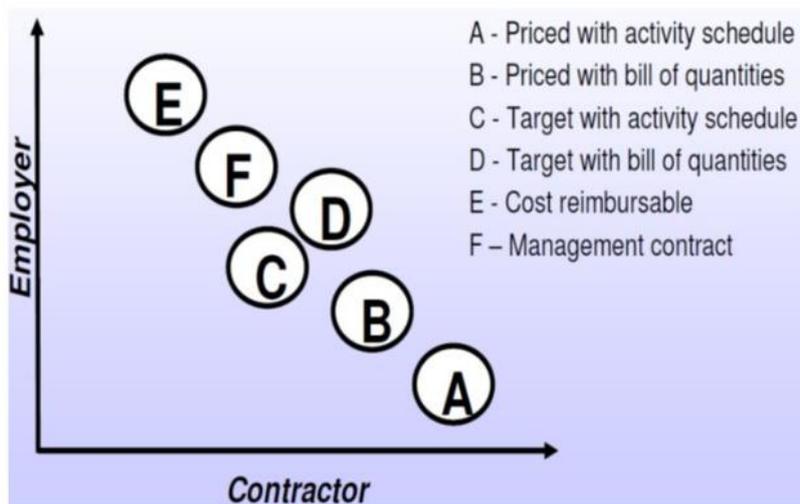
NEC Contract Options;

Below table 1 identifies the main options for NEC suite of contracts, we have considered options A-D as the most appropriate for the proposed Works;

Table 1: NEC Procurement Options

The documents to NEC3 and the procurement options

Corresponding allocation of financial risk



NEC Option A: Priced contract with activity schedule

Option A is a priced contract with an activity schedule, which relates to a programme where each activity is allocated a price and interim payments are made against the completion of each activity once 100% complete. The contractor largely bears the risk of carrying out the work at the agreed prices. Tendered price is adjusted by Compensation Events (variations).

NEC Option B: Priced contract with bill of quantities

Under Option B, the bill of quantities is a ‘traditional’ bill of quantities, i.e., a document prepared by the cost consultant (often a quantity surveyor) that provides project specific measured quantities of the items of work identified by the drawings and specifications in the tender documentation.

From the employer’s specified quantities, the Contractor prices its rates accordingly, and bears the risk of carrying out the work at the agreed prices. Tendered price is adjusted by Compensation Events (variations).

NEC Option C & D: Target Contracts

Option C & D are target contracts where the commercial risks are shared between client and contractor through the provision of pain / gain share percentages agreed at tender stage. The parties will share cost savings but also overspends on the final outturn cost.

JCT Contract Options;

JCT Standard Building Contract with and without Quantities

The JCT Standard Building Contract is intended for large/complex construction projects where detailed contract provisions are needed. Standard Building Contracts are suitable for projects procured via the traditional method.

JCT Design and Build Contract

The JCT Design and Build Contract is designed for construction projects where the contractor carries out both the design and the construction work. Design and build projects can vary in scale, but the Design and Build Contract is generally suitable where detailed provisions are needed.

3.1 Selection Matrix

Having considered and reviewed the advantages and disadvantages associated with each procurement approach against the Client’s brief, the below scoring matrix has been developed and scores applied against each requirement associated with the different procurement approaches.

Employer Requirement	Score Rating	Design & Build	Traditional
Timing – Earliest start date	10	9	6
High Quality Required	15	8	10
Cost of Employer Changes	5	3	3
Minimum Client Involvement	5	4	5
Risk Sharing	10	9	6
Tendering Cost	10	8	9
Quality Control	5	3	5
Value for money	15	13	9
Buildability	10	9	6
Cost Certainty	15	10	13
Total Rating	100	76	72

Based on the initial scoring matrix above, the Design & Build procurement approach (rating score of 76 out of 100) seems to best align to the Clients Requirements and Critical Success Factors.

The below matrix scores several contract particulars associated with each Form of Contract and how that would be an advantage to the Client during construction.

Contract particulars	Score Rating	JCT	NEC
Timing – earliest start date	5	3	3
Project Management involvement	10	5	10
Programme Control	15	5	15
Change Management	15	10	13
Quality Control	10	10	12
Risk Management	15	8	13
Contract Admin	15	10	13
Cost control	15	10	15
Total Rating	100	61	94

Based on the initial scoring matrix above, the NEC contract particulars (rating score of 94 out of 100) seems to best align to the Clients appetite to risk and programme management.

4 Conclusion & Recommendation

4.1 Recommendations

In consideration of the matters outlined in this report, it is recommended that CCC adopt the Two-Stage Design & Build route as the most appropriate procurement method for the Nelson and Loudoun recladding project, to seek the benefit of Early Contractor Involvement and apportioning of risks effectively to achieve best value for money, cost certainty and programme benefits.

For the Principal Contractor appointment, it is recommended that the Pre-Construction Stages be appointed via a NEC4 Professional Services Contract – Option A Priced Contract with Activity Schedule. For the Construction Works, we recommend the NEC4 ECC Contract – again using Option A, largely to promote programme efficiencies and cost certainty during construction, based on a fixed price lump sum, aligned to the agreed activity schedule.

In addition, and prior to the appointment of the Principal Contractor, it is recommended that CCC procure and appoint a Technical Advisor (TA) via a Professional Services Contract (NEC4 PCS Option A), to assist CCC in;

- Preparing Scope/Employers Requirements document (RIBA 0-1).
- To assist Contractor procurement/selection and oversee the Contractors Design development through pre-construction.
- To provide CCC with guidance on new Building Safety Act and inform Employers Requirements.
- Act as Principal Designer (H&S) until Contractor is appointed.

4.2 Procurement Strategy Approach 'Next Steps'

Initially, we propose on your instruction, to procure Technical Advisors (TA) via SEWTAPS on behalf of CCC to undertake above. To confirm, any TA appointment would be direct with CCC.

Once the TA team has been appointed, we propose to procure a Principal Contractor via South East & Mid Wales Collaborative Construction Framework (SEWSCAP3). Initially, on a NEC Professional Services Contract (NEC PSC - Option A) to undertake the pre-construction design services – who will be responsible for the required pre-construction surveys and design, and then by agreement and satisfactory conclusion of the pre-construction stages, provide a lump sum, fixed price tendered sum, and undertake the construction of the recladding project from RIBA Stage 5.

4.3 Procurement Justification

- Due to the lapsed time since the Atkins SNC Lavalin RIBA Stage 3 report was undertaken and the recent implementation of the Building Safety Act in October 2023, it is recommended that the appointment of the Preferred Contractor shall be from RIBA Stage 2, to capture any design requirements and information to inform the Golden Thread.
- Atkins SNC Lavalin have confirmed they have concluded their current commission, a new Technical Advisor is required to update and inform CCC's Scope/Employers Requirements.
- This approach will enable that design can be progressed and benefit from Early Contractor Involvement.
- CCC and their TA team will have the ability to monitor and control design, through the pre-construction stages, which will allow for all requirements to be implemented.
- This form of contract allows for risk to be jointly shared between the parties, which will appeal to the current market, without the appointed Contractor having to allow for pricing 'all-risks' associated with the project.

- The appointment of a D&B Contractor will allow for all aspects of the design work to be carried out and risk transferred to the Contractor, to mitigate Compensation Events (variations) for Client risks in the contract at a later stage. The Client may be required to retain some risks in order to realise best price from the Contractor.
- Working collaboratively with the contractor will ensure that lessons learnt can be developed to produce snag free buildings.

Appendices

A. Project Risk Register

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A. Project Risk Register



Cardiff Council

Risk Matrix

Project	Nelson & Loudoun Re-cladding
PMC	Mott MacDonald
Document Title	Risk Register Matrix
Document Revision	Nov-23
Originator / Author	Cameron Thomas
Issue Date	21-Nov-23

Nelson & Loudoun Re-cladding

Risk Management Approach

ID	Risk Zone
1	External
2	Planning
3	Utilities
4	Design
5	Commercial
6	Construction
7	Organisational
8	Procurement
9	Contract Management

Risk Management must focus on technical, cost/resource and schedule consequences and include the following work steps:

Identify, and analyze likelihood (probability), impact and projected timeframe of occurrence

Plan mitigation actions

Prioritize to address critical risks

Track mitigation to close out

Risk Matrix

Very High	5	A	S	S	S	S
		20%	40%	60%	80%	100%
High	4	A	A	S	S	S
		16%	32%	48%	64%	80%
Medium	3	A	A	A	S	S
		12%	24%	36%	48%	60%
Low	2	M	A	A	A	S
		8%	16%	24%	32%	40%
Very Low	1	M	M	A	A	A
		4%	8%	12%	16%	20%
Impact/ Consequence	Score	1	2	3	4	5
Likelihood/ Probability		Very Low	Low	Medium	High	Very High
		Never heard of in the industry	Heard of in the industry	Occured rarely in previous project experience of MM	Occurred occasionally in previous project experience of MM	Occurred frequently in previous project experience of MM

Risk Impact		Risk Score	Mitigation Prioritisation	Risk Area Distribution
S	Significant	37-100%	Urgent	40%
A	Acceptable	09-36%	Should be planned	48%
M	Minor	0-8%	Ongoing	12%

Nelson & Loudoun Re-cladding

Risk Management Philosophy

		Time Reference (Days)	Cost Reference (% of Project Cost)	People	Environment	Quality of Work/ Product		
Likelihood/ Probability	0	Risk Mitigated					Risk Mitigated	
	1	Very Low					Negligible probability the risk event will happen – less than 20%	
	2	Low					Small probability the risk event will happen - 20% - 40%	
	3	Medium					Possibility that the risk event will happen - 40% - 60%	
	4	High					Likely the risk event will occur - 60% - 80%	
	5	Very High					A probability approaching certainty that the problem event will occur - 80% or more	
Impact/ Consequence	1	Very Low	negligible effect on programme	negligible	negligible	negligible	negligible	No threat to continuity/mandate of Project
	2	Low	5% effect on programme	1% budget	minor injury	minor environmental incident	minor effect on local company image/ business relationship mildly affected	Project budget or schedule not impacted in a material way Delivery capability slightly impaired in one or two streams
	3	Medium	12% effect on programme	10% budget	major injury	environmental incident requiring management input	local media exposure/ business relationship affected	Little impact on project budget or schedule Delivery capability slightly impaired
	4	High	25% effect on programme	20% budget	fatality	environmental incident leading to prosecution or protestor action	nationwide media exposure / business relationship greatly affected	Minor impact to continuity/mandate of Project Project budget and/or schedule moderately impacted
	5	Very High	50% effect on programme	50% budget	multiple fatalities	major environmental incident with irreversible effects and threat to public health or protected natural resource	permanent nationwide affect on company image/ significant impact on business relationship	Project budget and/or schedule significantly impacted Delivery capability severely impaired in most streams

The Risk Management Process is iterative in nature and will involve participation from various project teams and stakeholders throughout the Project lifecycle

Each Key Project member has distinct roles and responsibilities in the risk management process

Risk Owner - Project Stakeholder whose actions govern the risk implication and mitigation

Risk Coordinator - Project Team Member who is monitors the progress of the associated risk

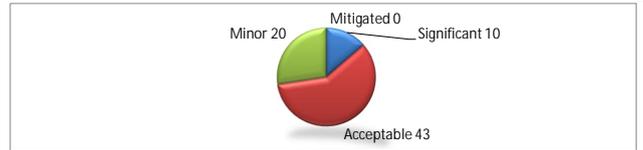
	Identify Risks	Update Risk Matrix	Assess Risk	Develop/ Execute Mitigation Strategy	Approve Mitigation Strategy	Monitor Risk/ Mitigation Strategy
MM Project Team Member	X					
MM Project Coordinator	X	X				X
MM Project Manager	X		X	X		X
MM Project Director	X		X	X	X	
Owner's Representative	X		X	X	X	X

Nelson & Loudoun Re-cladding

Risk Assessment

ID	Risk Zone	Total Risks (No.)	Significant	Acceptable	Minor	Mitigated
0	Commercial	6	1	5	0	0
1	External	7	3	4	0	0
2	Planning	3	0	2	1	0
3	Utilities	2	0	2	0	0
4	Design	0	1	12	2	0
6	Construction	20	2	11	7	0
7	Organisational	3	0	1	2	0
8	Procurement	10	2	2	6	0
9	Contract Management	7	1	4	2	0
		58	10	43	20	0

Risk Impact	No. of	%	Mitigation
Significant	10	14%	Urgent
Acceptable	43	59%	Should be planned
Minor	20	27%	Ongoing
Mitigated	0	0%	
Total Risk Events	73	100%	



Commercial																				
ID	Commercial			Impact							Likelihood		Risk Score	Risk Impact	Mitigation Priority	Counter Measure	Risk Owner	Review Point/ Milestone	Expected Closure Time Scale	Risk Coordinator
	Risk Title	Description/ Event	Impact	Time	Cost	People	Environment	Work/Product Quality	Score	Type	Score	Type								
1	Cost Plan	Current cost data is based on not scaled drawings, potential errors and omissions due to lack of project brief. Potential increase in project cost when baselined against the OCE.	Budget increase, requiring additional funding through WG and Business Cases.	4	4	0	0	0	2	Low	3	Medium	24%	Acceptable	Should be planned	cost market tested and validated by MM	CCC	Gateway Stages	Project Closure	MM Project Manager
2	Additional Funding / Capital	CCC need to consider if additional capital is required and how that will be obtained i.e WG funding etc	WG funding process may take some time	3	4	1		1	3	Medium	3	Medium	36%	Acceptable	Should be planned	Early board meeting to include additional costs for removal of cladding and associated works.	CCC	RIBA stages	Project Closure	MM Project Manager
3	Two Stage procurement approach	Unknown contract sum until 2nd stage tender returns.	Unable to provide contract sum / fixed price until later in the project to CCC board.	3	4	0	0	1	2	Low	3	Medium	24%	Acceptable	Urgent	MM to validate	CCC	RIBA stages	Project Closure	MM Project Manager
4	Onerous contract T&Cs	Contractor may impose onerous T&Cs for undertaken project, unacceptable to CCC.	Unable to agree contract terms with bidders.	4	4	1	0	3	3	Medium	4	High	48%	Significant	Urgent	CCC to discuss risk appetite and T&Cs upfront in terms of risk allocation with project team.	CCC	Pre-Contract	Project Closure	MM Project Manager
5	Target Cost Contract & Secondary Option Clauses - such as X1.	Contractors only engaging with atarget based pain/gain contract.	Additional commercial risks to the Client.	3	4	0	0	2	2	Low	4	High	32%	Acceptable	Should be planned	Legal advise from Blake Morgan. NEC ECC Project Managers to administer the contract and risk allocation.	CCC	Pre-Contract	Project Closure	MM Project Manager
6	Scope creep	Additional unknown works relating to improvements or repairs required.	Additional cost and programme risks.	3	3	0	0	3	2	Low	3	Medium	24%	Acceptable	Should be planned	Robust design and survey required throughout the pre-con stages.	CCC	Gateway Stages	Project Closure	MM Project Manager

Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation	Prioritisation
Significant	1	17%	08-10	Urgent	
Acceptable	5	83%	06-07	Should be planned	
Minor	0	0%	01-05	Ongoing	
Mitigated	0	0%	0	-	

External Dependency																				
ID	External Risk			Impact							Likelihood		Risk Score	Risk Impact	Mitigation Priority	Counter Measure	Risk Owner	Review Point/ Milestone	Expected Closure Time Scale	Risk Coordinator
	Risk Title	Description/ Event	Impact	Time	Cost	People	Environment	Work/Product Quality	Score	Type	Score	Type								
1	Changes in Law / Legislation	1. Changes in the Building Safety Act, secondary Laws and Building Control; 2. Delay in timely implementation of same, misreading of same resulting in culpable violations.	1. Change in Design required in relation to Fire Regulations and; adverse impact on budget; limitations in current Deding Team 2. Modifications in Cost Plan. Restrictions in usability of the facility	5	4	2	1	5	4	High	3	Medium	48%	Significant	Urgent	Contractor are consulting with building control and SWFRS regarding recent changes in building regulations that will affect the fire testing. Ensure current legislation is followed as best practice. Appointment of TA team to oversee Legislation changes.	CCC	Reviewed monthly with Contractor and Building Control	Project Closure	MM Project Manager
2	Public / Residents	members of the public becoming aggrieved with the cladding process	Affects procurement, labour deployment, work progress	3	3	4	2	4	4	High	4	High	64%	Acceptable	Urgent	CCC hold community drop in sessions to assist in the stakeholder management process. Contractor TLO to issue communication plan to CCC	CCC	As and when required	Project Closure	MM Project Manager
3	Commercial risk	Variation in price and escalation in prices of materials, labour, equipment due to Brexit/Covid	Cost overrun Contract disputes	4	4	0	0	0	2	Low	4	High	32%	Acceptable	Should be planned	1. Agree on price and basis of price 2. Agree on assumptions for calculating the variations Record all discussions and negotiations in writing 3. Agree on fixed price. Built in inflation to be accounted. 4. In case of price increase; Construction Index i.e. CIDC (Construction Industry Development Council) reference to be	CCC	Monthly	Project Closure	MM Project Manager
4	Drastic shortfall / clampdown in supply of essential construction	Disruption in supply of essential bulk materials due war, strikes, shortages - anticipated price hike etc.	Delay in construction activities affecting schedule; cost overheads	3	3	1	0	3	2	Low	3	Medium	24%	Acceptable	Should be planned	contractor to advise on materials likely to be affected.	CCC		Project Closure	MM Project Manager
5	Building Control	A number of items that require A1 fire rating are being discussed with building control	Delay the Design Stages. Programme elongation.	4	4			4	4	High	3	Medium	48%	Significant	Urgent	Meeting held with Building Control and materials matrix provided	CCC	Monthly	Project Closure	MM Project Manager
6	Fire testing	BRE may require the new cladding system fire testing rig and advised of changes in the regulations	delayed fire test	4	4			4	4	High	3	Medium	48%	Significant	Urgent	no mitigated, fire test booked in for 1st week of August 2021.	CCC	Monthly	Project Closure	MM Project Manager
7	Prevention of Flat Access	Contractor will require full access to each flat in a timely manner	Delay to programme. Additional cost through variations.	4	4	0	0	4	3	Medium	3	Medium	36%	Acceptable	Should be planned	CCC to communicate with residents. TLO throughout the contract. Letter drops and phone calls on countdown to access	CCC	Monthly	Project Closure	MM Project Manager

Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation Prioritisation
Significant	3	43%	08-10	Urgent
Acceptable	4	57%	06-07	Should be planned
Minor	0	0%	01-05	Ongoing
Mitigated	0	0%	0	-

Planning Risks																				
ID	Internal Risk			Impact							Likelihood		Risk Score	Risk Impact	Mitigation Priority	Counter Measure	Risk Owner	Review Point/ Milestone	Expected Closure Date	Risk Coordinator
	Risk Title	Description/ Event	Impact	Time	Cost	People	Environment	Work/Product Quality	Score	Type	Score	Type								
1	Planning process	Contractor to submit the NMA	There is a risk that the planners may reject the application on the basis that there has been a significant enhancement from the previous cladding system.	4	4	0	1	3	3	Medium	2	Low	24%	Acceptable	Should be planned	Early engagement with CCC Planning Department required.	CCC	Project Progress Review monthly meetings	Project Closure	MM Project Manager
2	Objections to the consultation	Members of the public / tenants objecting to the works, unable to agree design.	Additional design work.Prolonged programme. Negative impact on Cllrs.	3	3	3	2	3	3	Medium	2	Low	24%	Acceptable	Should be planned	Early engagement with residents required to feed into design process	CCC	Gaetway	Project Closure	MM Project Manager
3	Implication of third party agreements		Additional work, time and costs to legal agreements of the individual flat owners / occupier	3	2	3	0	0	2	Low	1	Very Low	8%	Minor	Ongoing	engage early with all flat owners/occupiers and hold discussion with Statutory bodies. Cardiff CC legal team to overcome any legal implications involved with the proposed recladding works.	CCC	Project Progress Review monthly meetings	RIBA Stage 3	MM Project Manager
									#DIV/0!	#DIV/0!	0	#N/A	0%	Mitigated						

Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation Prioritisation
Significant	0	0%	08-10	Urgent
Acceptable	2	67%	06-07	Should be planned
Minor	1	33%	01-05	Ongoing
Mitigated	0	0%	0	-

Design																				
ID	Internal Risk			Impact							Likelihood		Risk Score	Risk Impact	Mitigation Priority	Counter Measure	Risk Owner	Review Point/ Milestone	Expected Closure Time Scale	Risk Coordinator
	Risk Title	Description/ Event	Impact	Time	Cost	People	Environment	Work/Product Quality	Score	Type	Score	Type								
1	Improper Work Quality	If the quality of work is found to be not satisfactory or as per required standards	Rework Time delay Added costs	3	2	1	2	4	2	Low	1	Very Low	8%	Minor	Ongoing	Appointment of reputed contractor with adequate resource capability Adherence to QMP and Safety Management Plan agreed with contractors	Contractor	Site Progress Review Appointment of Contractors Orientation of QMP and Safety Management Plan to Contractors	Project Closure	MM Construction Manager
2	Non compliance of System	Non adherence of system by site personnel during work execution	Lapses in aspects such as safety, quality, health	2	3	2	2	3	3	Medium	1	Very Low	12%	Acceptable	Should be planned	Imparting trainings to contractor staff at site. Monitoring of system adherence by MM site team Periodic Audits	Contractor	Site Progress Review	Project Closure	MM Construction Manager
3	Improper storage and transport of material	Improper storage of material and equipment at site Improper handling of material and equipment at site Inadequate transport arrangement for material and equipment	Damage of material Improper stowage of material on site may cause hindrance in construction activities Damage during transport of material may cause added cost and delay in construction activities Unsafe handling of material and equipment at site may lead to safety	2	1	2	2	3	2	Low	2	Low	16%	Acceptable	Should be planned	Defining storage area at site Insurance cover for damage during transport Having correct handling equipment at site	Contractor	Periodic Progress Review Material Planning	Project Closure	MM Construction Manager
4	Inadequate Material Resource Planning	Inadequate material planning for construction activities during project life cycle, inadequate water supply	Temporary shortage of material Time Delay Increase in project costs	5	5	0	0	5	3	Medium	5	Very High	60%	Significant	Urgent	Contractor to advise of any material shortages within the market.	Contractor	Periodic Progress Review Material Planning	Project Closure	MM Project Manager
5	Construction Team	Shortage of construction team resources on site during the construction phase of the project Non availability of skilled/ unskilled labour at site In competent teams	Added costs Possible re-planning of site construction activities, dependent on labour intensity	2	2	0	0	3	2	Low	1	Very Low	8%	Minor	Ongoing	Daily resource monitoring and reporting Collection of contractor resource plan Contractual arrangement to specify Competence requirement at key positions CVs of Contractors team to be approved Activity based resource loaded schedule to be developed and daily resource monitoring and reporting to be done Contractors' resource plans to be collected Impart trainings to construction staff at site Monitoring of work by MM site team Contractual arrangement to specify competence requirement at key positions CVs of contractor team to be approved	Contractor	Site Progress Review Site Mobilization Review	Project Closure	MM Project Manager
6	Natural copper window cills	Natural copper very expensive material. Design requirement for N&I?	Additional cost to the project.	2	4	0	0	3	3	Medium	3	Medium	36%	Acceptable	Should be planned	To be close out as part of the TA ER review.	Contractor	Periodic Progress Review	Project Closure	MM Project Manager
7	Non A1 rated materials	Contractor have noted that some elements cannot be A1 rated.	Client expectation is that everything would be A1	2	4	0	0	3	3	Medium	2	Low	24%	Acceptable	Should be planned	Material tracker approve by the Client.	Contractor/CCC	Periodic Progress Review	Project Closure	MM Project Manager
8	Consequential improvements	Additional Scope required through Building Control due to improvements required, such as access and MEP works	Additional unknown design. Programme elongation. Additional costs associated with design and project fees.	3	3	0	1	3	2	Low	3	Medium	24%	Acceptable	Should be planned	Early engagement with stakeholders and robust ERs required. Implementation of design change	Contractor/CCC	Periodic Progress Review	Project Closure	MM Project Manager
9	Cladding Design alterations	Design improvements from lessons learnt at Lydstep Flats project. Unable to agree with Stakeholders and Stats.	Additional unknown design. Programme elongation. Additional costs associated with design and project fees.	3	3	1	0	3	2	Low	3	Medium	24%	Acceptable	Should be planned	Early engagement with stakeholders and robust ERs required. Implementation of design change	Contractor	Monthly Design meetings	RIBA Stage 4	MM Project Manager
10	Boiler Replacements	Existing boilers will not be compatible with new high rise flue types. Under Gas Safe a new flue is required with new boiler. CDM design issue when replacing?	Additional unknown design. Programme elongation. Additional costs associated with design and project fees.	3	3	0	0	3	2	Low	4	High	32%	Acceptable	Should be planned	Include as part of the ERs. Contractor to undertake survey of existing boilers and CCC to provide spreadsheet for known make and models etc.	CCC / Contractor	Monthly Design meetings	RIBA Stage 4	MM Project Manager
11	Brickslip Sizing	Varying thickness of brick slips causes unnecessary additional labour and cost.	Additional material costs and labour resource.	2	3	1	0	2	2	Low	3	Medium	24%	Acceptable	Should be planned	Review of brick slips required,	CCC / Contractor	Monthly Design meetings	RIBA Stage 4	MM Project Manager
12	Fixtures / Fittings Removal	Removal of satellite dishes, CCTV cameras, lightening tape etc.	Additional cost to the project.	3	3	0	0	3	2	Low	4	High	32%	Acceptable	Should be planned	As part of Ers	CCC / Contractor	Monthly Design meetings	RIBA Stage 4	MM Project Manager
13	Fire evacuation planning	Fire evacuation plan updated to reflect the temporary condition during construction.	Negative impact on residents. Requirement for use of external POS. Design issues with construction site logistic interfaces	1	2	3	0	2	2	Low	2	Low	16%	Acceptable	Should be planned	Temporary changes to Personal Emergency Evacuation Plan for residents requiring assistance during construction	CCC / Contractor	Monthly Design meetings	RIBA Stage 4	MM Project Manager
14	Specification of Cavity closers	Difficulties with Hilti fire barrier detailing. Explore Sidewise as alternative.	Additional material costs and labour resource.	3	3	1	0	4	3	Medium	3	Medium	36%	Acceptable	Should be planned	Design review undertaken	CCC / Contractor	Monthly Design meetings	RIBA Stage 4	MM Project Manager

15	Existing building	Programme delays due to additional structural works necessary after the structural surveys of the existing buildings	Additional works. Additional costs and programme implications	3	3			3	3	Medium	3	Medium	36%	Acceptable	Should be planned	Robust surveys at pre-con stage. TA to write into ERs requirement for surveys.	CCC / Contractor	Monthly Design meetings	RIBA Stage 4	MM Project Manager
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Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation Prioritisation
Significant	1	7%	08-10	Urgent
Acceptable	12	80%	06-07	Should be planned
Minor	2	13%	01-05	Ongoing
Mitigated	0	0%	0	-

Utilities																					
ID	Internal Risk			Impact							Likelihood		Risk Score	Risk Impact	Mitigation Priority	Counter Measure	Risk Owner	Review Point/ Milestone	Expected Closure Time Scale	Risk Coordinator	
	Risk Title	Description/ Event	Impact	Time	Cost	People	Environment	Work/ Product Quality	Score	Type	Score	Type									
1	Unknown utilities	Diversion of services or replanning of the works	Easements of the existing utilities	4	3	0	0	3	3	Medium	3	Medium	36%	Acceptable	Should be planned	Early consultation with the utilities to mitigate any issues	CCC	RIBA Stages	RIBA Stage 4	MM Project Manager	
2	Gas meter cupboard	Gas cupboards may not meet current Gas Regulations	Additional work required through design and programme costs.	3	3	0	0	3	3	Medium	3	Medium	36%	Acceptable	Should be planned	Undertake review at earliest convenience by CCC.	CCC	RIBA Stages	RIBA Stage 5	MM Project Manager	
3				0	0	0	0	0			0	#N/A	0%	Mitigated							

Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation Prioritisation
Significant	0	0%	08-10	Urgent
Acceptable	2	100%	06-07	Should be planned
Minor	0	0%	01-05	Ongoing
Mitigated	0	0%	0	-

Construction Risks																				
ID	Internal Risk			Impact							Likelihood		Risk Score	Risk Impact	Mitigation Priority	Counter Measure	Risk Owner	Review Point/ Milestone	Expected Closure Time Scale	Risk Coordinator
	Risk Title	Description/ Event	Impact	Time	Cost	People	Environment	Work/Product Quality	Score	Type	Score	Type								
1	Improper Work Quality	If the quality of work is found to be not satisfactory or as per required standards	Rework Time delay Added costs	3	2	1	2	4	3	Medium	1	Very Low	12%	Acceptable	Should be planned	Appointment of reputed contractor with adequate resource capability Adherence to QMP and Safety Management Plan agreed with contractors	Contractor	Site Progress Review Appointment of Contractors Orientation of QMP and Safety Management Plan to Contractors	Project Closure	Construction Manager
2	Non compliance of System	Non adherence of system by site personnel during work execution	Lapses in aspects such as safety, quality, health	2	3	2	2	3	3	Medium	1	Very Low	12%	Acceptable	Should be planned	Imparting trainings to contractor staff at site. Monitoring of system adherence by MM site team Periodic Audits	Contractor	Site Progress Review	Project Closure	Construction Manager
3	Improper storage and transport of material	Improper storage of material and equipment at site Improper handling of material and equipment at site Inadequate transport arrangement for material and equipment	Damage of material Improper stowage of material on site may cause hindrance in construction activities Damage during transport of material may cause added cost and delay in construction activities Unsafe handling of material and equipment at site may lead to safety	2	1	2	2	3	2	Low	1	Very Low	8%	Minor	Ongoing	Defining storage area at site Insurance cover for damage during transport Having correct handling equipment at site	Contractor	Periodic Progress Review Material Planning	Project Closure	Construction Manager
4	Inadequate Material Resource Planning	Inadequate material planning for construction activities during project life cycle, inadequate water supply	Temporary shortage of material Time Delay Increase in project costs	5	3	0	0	2	2	Low	1	Very Low	8%	Minor	Ongoing	Alternate make of material to be identified Alternate source of material to be identified and planned for contingencies Transfer risk to the main contractor through	Contractor	Periodic Progress Review Material Planning	Project Closure	Construction Manager
5	Construction Team	Shortage of construction team resources on site during the construction phase of the project Non availability of skilled/ unskilled labour at site In competent teams	Added costs Possible re-planning of site construction activities, dependent on labour intensity	2	2	0	0	3	2	Low	1	Very Low	8%	Minor	Ongoing	Daily resource monitoring and reporting Collection of contractor resource plan Contractual arrangement to specify Competence requirement at key positions CVs of Contractors team to be approved Activity based resource loaded schedule to be developed and daily resource monitoring and reporting to be done Contractors' resource plans to be collected Impart trainings to construction staff at site Monitoring of work by MM site team Contractual arrangement to specify competence requirement at key positions CVs of contractor team to be approved	Contractor	Site Progress Review Site Mobilization Review	Project Closure	Construction Manager
6	Variation in actual construction vs planned designs	Significant variation in actual constructed vis-a-vis authority approved plans	Delay in obtaining final approval (approval to operate)	2	2	0	0	0	1	Very Low	1	Very Low	4%	Minor	Ongoing	Structured management of change.	Contractor	Periodic Progress Review	Project Closure	Construction Manager
7	Disputes	Disputes at site due interpersonal issues and due to different work procedures followed by various contractors Unwanted incidents amongst labourers	Lead to legal issues, causing time delays	2	2	1	0	2	2	Low	1	Very Low	8%	Minor	Ongoing	Dispute resolution mechanism to be adopted and set in place Ensuring healthy working environment at site	Contractor	Periodic Progress Review	Project Closure	Construction Manager
8	Quality procedures conformance at site	Non conformance of quality procedure by site personnel during work execution	Rework Time delay Added costs	2	2	1	1	4	2	Low	1	Very Low	8%	Minor	Ongoing	Imparting trainings to contractor staff at site about Quality Assurance Plan(QAP) Monitoring of quality adherence by MM site team	Contractor	Periodic Progress Review	Project Closure	Construction Manager
9	Lack of Competence of Construction teams	In the event of construction teams, not adequately competent enough to carryout designated tasks	Rework Time delay Added costs	3	2	1	1	3	2	Low	1	Very Low	8%	Minor	Ongoing	Contractual arrangement to specify Competence requirement at key positions CVs of Contractors team to be approved Imparting trainings to construction staff at site. Monitoring of work by MM site team	Contractor	Periodic Progress Review Site Mobilization Review	Project Closure	Construction Manager
10	Existing AOVs	Fire risk when AOV decommissioned - The existing AOV's to each block will need to be decommissioned and removed. From then and up until the new AOV is commissioned the fire safety will be compromised.	H&S issues with install, resident issues.	1	2	3	3	4	3	Medium	3	Medium	36%	Acceptable	Should be planned	Contractor to liaise with CCC and identify the coordination issues. Building Control and SWFR to be consulted.	Contractor	Periodic Progress Review Site Mobilization Review	Project Closure	Construction Manager
11	Construction activity on a live DOMESTIC site	High frequency of plant and material movements with shared entrance and egress points , with risk to the general public	H&S issues onsite, potential HSE involvement and programme risks	3	3	3	3	2	3	Medium	3	Medium	36%	Acceptable	Should be planned	Traffic management designed with all deliveries programmed to be prohibited from peak times. A dedicated traffic management system with a permanent gate person, with a holding area for site deliveries will greatly reduce the risks. Agree phasing plans with the Client, Resident representatives and Resident liaison officer and regularly update where necessary	Contractor	Periodic Progress Review Site Mobilization Review	Project Closure	Construction Manager

12	Quality management	Ensuring fire rated products are installed in accordance with manufacturers recommendations	Risk of abortive works if the product installation has not been fitted properly	3	3	3	1	5	3	Medium	3	Medium	36%	Acceptable	Should be planned	NEC Supervisor appointed as well as façade specialists to oversee install. Work closely with the Supervisor to identify fire barriers as "assets". This will allow the individual installations to be photographed during construction and recorded in the O&M manual as evidence of compliance with design drawings and fire certification. weekly site visit by our Fire Engineer to sign off each stage of the project for	Contractor	Throughout Construction	Project Closure	Construction Manager
13	Failure to achieve Building Control Approval	Unable to sign off the project at Completion	Additional cost associated with non-compliance	4	4	0	0	4	3	Medium	2	Low	24%	Acceptable	Should be planned	consult with Cardiff CC Building Control early in RIBA Stage 3 to ensure Building Control are on board with us throughout the technical design process and on through construction	Contractor	Throughout Construction	Project Closure	Construction Manager
14	Site traffic and disruption to the local community	Disruption to the community normal days operation causing disruption for local residents	H&S issues. Aggrieved residents and Cllrs	1	1	4	3	2	3	Medium	3	Medium	36%	Acceptable	Should be planned	The proposed site access route through the estate will be presented to the local community and the client during the preconstruction stage. The location of our proposed site offices and welfare facilities was the location of the previous contractor compound	Contractor	Throughout Construction	Project Closure	Construction Manager
15	Property safety	Exposing the individual flats to possible break-ins during the construction period when scaffold / Mast Climbers are erected	Possible security issues for the residents, also possibility of residents / children entering the scaffold from within causing serious safety issues.	1	3	5	3	3	3	Medium	2	Low	24%	Acceptable	Should be planned	Mast Climber are to be lowered down after the completion of the days shift. Scaffolding to be barriered off from access below and from the individual flat balconies	Contractor	Throughout Construction	Project Closure	Construction Manager
16	Weather conditions preventing high level working	Severe adverse weather conditions.	Programme delays during high winds or heavy rain	4	4	0	0	3	3	Medium	4	High	48%	Significant	Urgent	Monitor the weather forecast and programme the high level work activities around this forecast. Potential for adding a roof over the scaffolding to allow wet trades to continue.	Contractor	Throughout Construction	Project Closure	Construction Manager
17	Labour resource availability	Limited resource in localist for projects. Boyant market.	Delays to the programme by running the two block at once, putting strain on the local supply chain.	5	4	2	2	4	4	High	4	High	64%	Significant	Urgent	programme will require a large amount of plant, material and labour.	Contractor	Throughout Construction	Project Closure	Construction Manager
18	Maintaining access for the building residents during the construction activities	Restricting access for the residents during the scaffold erection or mast climber erection periods.	. Also delivery periods where large vehicles are entering and leaving the site.	2	2	2	2	2	2	Low	2	Low	16%	Acceptable	Should be planned	liaise with the residents throughout the construction period for each block, we will notify each resident of all activities and times where there will be restricted access. We will ensure safe and sufficient access for the emergency services throughout the construction period	Contractor	Throughout Construction	Project Closure	Construction Manager
19	Accidentally cutting off the power supplies to the flats / building	Accidentally cutting off the power supplies to the flats / building	Delays to the programme to repair any damages. Possible compensation to the residents should the services be interrupted for significant periods	2	2	2	2	2	2	Low	2	Low	16%	Acceptable	Should be planned	Undertake detailed intrusive surveys of all existing services to ensure we do not accidentally interrupt the services during the construction process	Contractor	Throughout Construction	Project Closure	Construction Manager
20	Asbestos	Excessive Asbestos present in the existing building structure	Additional time to remove the Asbestos safely from the site. Delays to the construction programme	3	3	0	2	2	2	Low	3	Medium	24%	Acceptable	Should be planned	Early intrusive investigation. Utilise second stage for additional investigations as required	Contractor	Throughout Construction	Project Closure	Construction Manager
										#DIV/0!										

Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation	Prioritisation
Significant	2	10%	08-10	Urgent	
Acceptable	11	55%	06-07	Should be planned	
Minor	7	35%	01-05	Ongoing	
Mitigated	0	0%	0	-	

Organizational Dependency																					
ID	Internal Risk			Impact							Likelihood		Risk Score	Risk Impact	Mitigation Priority	Counter Measure	Risk Owner	Review Point/ Milestone	Expected Closure Date	Risk Coordinator	
	Risk Title	Description/ Event	Impact	Time	Cost	People	Environment	Work/ Product Quality	Score	Type	Score	Type									
	1	Inadequate Project Staffing	Inadequate overall project team numbers Inadequately competent team members	Delays in project timelines Ineffective work execution Mishandling of information	3	2	3	0	2	2	Low	1									Very Low
2	Internal Communication	Gaps in internal communication across project stakeholders, including Owner, MM, Contractors, Sub Contractors, and Sub Consultants	Delays and rework	2	2	0	0	2	2	Low	1	Very Low	8%	Minor	Ongoing	Adhere to agreed communication plan Monitor and update communication plan	All Stakeholders	Project Progress Reviews	Project Closure	MM Project Planner & Coordinator	
3	Delay in Validation/Approval of Deliverables	Delay in comments/ approvals from Owner Delay in validation of documents submitted for finalization to Owner	Delay in finalisation of deliverables	4	2	0	0	2	2	Low	2	Low	16%	Acceptable	Should be planned	Document control and tracking mechanism implemented. Single set of consolidated comments to be provided for each document Comments to be received within decided number of days. Adherence to structured document control and monitoring mechanism	CCC	Project Progress Reviews	Project Closure	MM Project Manager	

Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation Prioritisation
Significant	0	0%	08-10	Urgent
Acceptable	1	33%	06-07	Should be planned
Minor	2	67%	01-05	Ongoing
Mitigated	0	0%	0	

Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation Prioritization
Significant	2	20%	08-10	Urgent
Acceptable	2	20%	06-07	Should be planned
Minor	6	60%	01-05	Ongoing
Mitigated	0	0%	0	

Contract Management

ID	Internal Risk			Impact							Likelihood		Risk Score	Risk Impact	Mitigation Priority	Counter Measure	Risk Owner	Review Point/ Milestone	Expected Closure Date	Risk Coordinator
	Risk Title	Description/ Event	Impact	Time	Cost	People	Environment	Work/Product Quality	Score	Type	Score	Type								
1	Inadequate Contract Agreement	Unwillingness of the vendor to accept the contract Failure of either party to fulfil the contract conditions Inadequate handling of contract Commencement of work by vendor before exchange of contract document	Time Delay Rework Contract disputes & Legal proceedings Escalation in project cost	2	4	0	0	1	2	Low	1	Very Low	8%	Minor	Ongoing	Negotiate but retain the integrity of contract Ensure good contract management through appropriate performance management and documentation Maintain and timely update procedures and practices prescribed in contract documentation Accept contract agreements post legal scrutiny for conforming to required expectations Ensure contract agreements are finalised, prior to initiation of work Force majeure clause to be clearly defined in the contract	Contractor/MM	Final Signing of all contract agreements for all respective packages Review of instances of non compliance of agreements	Project Closure	MM Project Manager & Cost Manager
2	Inadequate Change and Claim management	Inadequate Change and claim management in the project management setup Insufficient control measures to monitor changes and claims	Increase in contractual conflicts, Delay in the Project completion, Increase in Project cost	5	5	1	0	0	3	Medium	2	Low	24%	Acceptable	Should be planned	Follow the established Change and Claim control system, monitor and record every change and claim and update on a periodic basis. Seek approval from respective stake holder prior to implementation. Owner to minimize changes in Project Concepts user requests Change to documented and agree on the formula for calculating impact and variations	Contractor/MM	Monthly Review of Change Register	Project Closure	MM Project Manager & Cost Manager
3	Delay in Invoice Clearance	Delay in payment processing to contractors	Delay in project timelines, if work is halted by non delivery by vendors/ contractors	3	3	0	0	0	3	Medium	2	Low	24%	Acceptable	Should be planned	Cost Tracker to be updated Owner to make payments as per agreed terms and conditions	CCC	Project Package Review for Actual Costs at various stages of execution	Project Closure	MM Project Manager & Cost Manager
4	Lack of Performance	Lack of performance of the nominated contractor / main contractor/ sub contractor Absence or non compliance of HSSE policy Lack of quality performance	Delay in project timelines Loss in quality of the project Increase in project costs	4	2	3	1	4	3	Medium	3	Medium	36%	Acceptable	Should be planned	Transfer the risk to the contractor/ sub contractor Penalty/ Bonus Clause to be incorporated in the contract document Third party inspection of quality of materials Adherence to QMP and Safety Management Plan agreed with contractors Evoke performance bank guarantee	Contractor/MM	Project Progress Reports - Monthly	Project Closure	MM Project Manager & Cost Manager
5	Cost control	sufficient cost monitoring		3	3	0	0	0	2	Low	1	Very Low	8%	Minor	Ongoing	Ensure all the clauses are included in the Contract document Include all the conditions such as packaging instructions, insurance cover, liability clauses, inspection & review milestones in contract document All clearances and regulatory information that contractor needs, to be provided Maintain records and proper documentation	Contractor/MM	Project Progress Reports - Monthly	Project Closure	MM Project Manager & Cost Manager
6	NEC contract agreement	Contractors have suggested amendments to the call off contract	require further input from the PM and legal advisors	3	3	0	0	0	2	Low	2	Low	16%	Acceptable	Should be planned	Ensure all the clauses are included in the Contract document Include all the conditions such as packaging instructions, insurance cover, liability clauses, inspection & review milestones in contract document All clearances and regulatory information that contractor needs, to be provided Maintain records and proper documentation	CCC	Project Progress Reports - Monthly	Project Closure	MM Project Manager & Cost Manager
7	Level of insurances required by Contractor	Contractors are unable to obtain required insurances due to changes in legislation	Project at risk due to no insurances	4	2	4	4	4	4	High	3		48%	Significant	Urgent	Discussions with Framework contractors ongoing over T&C / Insurance requirements.	CCC	Weekly	Appointment of D&B Contractor	MM Project Manager & Cost Manager

Risk Impact	No. of Events	% Occurrence	Risk Score	Mitigation Prioritization
Significant	1	14%	08-10	Urgent
Acceptable	4	57%	06-07	Should be planned
Minor	2	29%	01-05	Ongoing
Mitigated	0	0%	0	