

Swansea Bay City Deal

Assessment of Increasing construction costs

November 2022



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Swansea Bay City Deal

Assessment of increased construction costs and the effect on Portfolio delivery

1. Summary

- 1.1. This report is an update of the original compiled in September 2022, which contained details on the inflationary pressures, uncertainty and volatility of construction industry costs. This uncertainty led to the PoMO undertaking an assessment based on a mix of actual and forecast costs to try and establish the likely impact of construction cost increases upon the infrastructure elements of the SBCD Portfolio.
- 1.2. Information available from various sources outlined within the report that the SBCD Portfolio has a funding gap of up to £31.2m relating to imminent and future construction activity. This update confirms that still to be the case. Noting, market indications suggest that future construction costs will continue to rise.
- 1.3. The funding gap is based on £397m of planned construction contracts. There is a further circa £250m of planned construction contracts to be awarded across the future zones and phases of the two Life Science and Wellbeing Schemes (Pentre Awel and Campuses). However, any funding gap associated with these future phases has not yet been assessed and included within the report as it is approximately 3 years away from delivery and any assessment now would likely be extremely different to the end outcomes.
- 1.4. This updated report is a point-in-time assessment which confirms that the original estimates of increased cost remain valid and adds an appraisal of the likely effect of any mitigating actions on the Portfolio deliverables.
- 1.5. Although there are a number of mitigating options available to project leads, the common approaches to address the funding shortfall are to:
 - a) Seek more funding
 - b) Revisit the construction brief
 - c) Open dialogue with contractors
- 1.6. Market reports continue to illustrate high and volatile material costs and the importance of client/contractor negotiations when agreeing specifications and terms
- 1.7. In November 2022 the Programme (Portfolio) board resolved that the in-house Governance structure within each Local Authority to be made aware of the potential over spend/issues and the PoMO will continue to appraise Programme Board of current situation through Monthly and Quarterly Monitoring. Programme board to continue to review all new and updated information as provided and continue to review mitigations and potential course of action to resolve any funding gaps that are confirmed and/or do not have a resolution at a project/programme level.

2. Purpose

- 2.1. Following the meeting of Programme Board on 19th July 2022 where a Construction Impact Assessment summary report was presented, the PoMO was tasked with an initial assessment of the potential effect of increased construction costs and to determine the magnitude of any funding gap in relation to the investment required to deliver the Programmes and Projects of the SBCD Portfolio. This is a red risk across the Portfolio and is subject to monthly monitoring.
- 2.2. The report to Programme Board noted that there were a concerning number of Red or Amber risks reported from within the portfolio (5 of 9 headline Programmes and Projects had returned the following information):

Risks	Impact Field	Scope	Targets	Time	Reputation	Stakeholder/ Partnerships	Proj. Costs	Procurement	Resources
Red		3	0	10	0	0	4	0	0
Amber		12	21	13	22	11	28	18	2
Green		29	23	21	22	33	12	26	42

2.3. The summary found that there are currently 3 areas of high concern and 4 areas of medium concern:

High concern	Medium concern
<ul style="list-style-type: none"> • Scope • Time • Project. costs 	<ul style="list-style-type: none"> • Delivery of targets • Potential reputational damage • Project costs • Procurement

2.4. Subsequently the PoMO was asked to monitor the financial shortfall and to produce an appraisal of the effect of any mitigating actions being proposed by the programmes and projects

3. Background

3.1. Several unprecedented international situations- Brexit, COVID-19 and the war in the Ukraine have occurred which, amongst other factors, have put significant pressure on the construction industry supply chain resulting in increased costs and longer lead times for the delivery of required services.

3.2. The combined effect of these situations is complex and wide ranging but culminates in the increase of construction project costs and delays in delivery schedules.

3.3. The ‘Summer 2022 Market Review’ issued by Arcadis, global leaders in sustainable design, engineering, and consultancy solutions for natural and built assets, illustrates the main issues and summarised and reviewed by Infrastructure Intelligence, here:

3.4. Tender price inflation will be between 8% and 10% this year, depending on the project.

3.5. The Ukraine war has added a further 3-5% to the costs of most construction projects. Higher, ranging from 5 to 8% for projects with a greater exposure to the steel market; and that -

3.6. ‘Latest BEIS data tracking inflation for a basket of materials is showing prices up by 25% in a year, the highest level of inflation seen so far in this cycle. However, a closer analysis of the BEIS data shows that there is potential for further upward price pressure for energy intensive products including cement and concrete products, plastic pipes and insulating products’ adding that ‘The cost of energy has a disproportionate effect on the construction industry supply chain.’

3.7. The Civil Engineering Contractors Association (CECA) supported by the Builders Merchants Federation and the Construction Products Association, also reported in July 2022 that:

“Average inflation for products and materials so far this year has been around 23%; with more significant price increases in energy intensive products such as insulation, cement, concrete and many steel products. Further price increases for those products are anticipated in the second half of the year owing to rising energy prices and input costs.”

3.8. [“Buckling Up, GLEEDS Summer 2022 UK Market Report:”](#) adds:

“As the world emerged from the COVID-19 pandemic, 2021 saw significant price escalation. Issues such as increased demand reduced production during lockdowns and raised raw material costs caused price surges. By the end of the year, it appeared that material prices were starting to settle. However, significant cost escalation has been seen as a consequence of Russia’s invasion of Ukraine.

3.9. There has been a 12.1% increase in the ‘All Work’ Construction Materials Price Index between February 22 and May 22.”

3.10. Data from ONS/BEIS indicates the following increases between February 2020 and May 2022 and increases between February and May 2022 and then February 2022 to August 2022:

Commodity	% increase Feb 20 – May 22	% increase Feb 22 – May 22	% increase Feb22 – Aug 22
Cement	16	3.7	9.4
Ready mix concrete	16.7	6.2	9
Pre-cast concrete products – pipes tubes etc	39	8.7	10.3
Pre-cast concrete products – Blocks, bricks , tiles and flagstones	28.2	7.2	7.7
Imported planed or sawn wood	65.2	16.5	0.5
Imported plywood	90.6	13.3	5.7
Fabricated structural steel	134.7	35.1	20.3
Flexible pipes and fittings	23.5	6.8	8.1
Insulating materials thermal or accoustic	24	6.8	18.4
Paint- non-aqueous	33.1	6.3	16.4

- 3.11. The table shows, in all examples, a significant % of cost increases relating to various construction materials has occurred in the four months from Feb 22 – August 22.
- 3.12. The [Gleeds Autumn report](#) for 2022 indicates that commodity prices remain volatile although supply may have improved. Continuing rises in energy costs appear to be negating any potential reduction of material prices.
- 3.13. Further to this, according to BCIS data, since May 22 it is estimated that average costs of construction materials and services will have increased from Quarter 1 by a further 2.8% at the end of Quarter 2 2022 (end of August).
- 3.14. The removal of the red diesel tax rebate in April 2022 will also have a direct effect on contractor's costs. Industry predicts an average increase of [73% on fuel bills alone](#). An indirect effect of this is concern for site safety with theft of white diesel becoming a potential issue leading to a possible increase in site security costs.
- 3.15. As a result of the above issues, delays in delivery are being experienced as high prices lead to difficulties in reaching terms that are acceptable to clients, contractors and funders. Fixed-cost contracts being issued by clients and Tier 1 contractors are becoming less palatable to the supply chain with some contractors declining to tender on unfavourable or high-risk contract terms.
- 3.16. Further issues being reported by the construction sector are skills shortages and an inability to recruit key skilled staff which affect construction delivery in some areas.
- 3.17. Acknowledging the importance and consequences of increased project costs, in October 2021 Welsh Government issued Welsh Procurement Policy Note WPPN 09/21: Sourcing building materials for construction projects in Wales¹, which provides advice to public sector bodies in Wales on how to manage market pressures affecting the availability and affordability of building materials.
- 3.18. WPPN09/21 contains a section covering Actions required by contracting authorities including managing delays due to material supply issues and managing the impact of volatile material prices for existing and future construction works and maintenance contracts.
- 3.19. It should be noted that WPPN09/21 was issued prior to the Ukraine war which is the trigger for much of the current uncertainty and cost increase across many sectors.

4. Looking forward

- 4.1. Reviews from professional cost consultants anticipate forecasted inflation for construction in Wales will range from 4%-5% per annum, compounded over the next two years.
- 4.2. The Gleeds Autumn review for 2022 predicts a 4.5% level of inflation for project costs in Wales during 2023
- 4.3. Arcadis however anticipated a lower effect of 2-3% for 2023 with a potential to return to 4-5% in 2024 as cost of living rises and a potential recession take effect.
- 4.4. Generally, it is forecasted that prices are unlikely to fall significantly, even if supply issues are eased. The mid to long term view for recovery is reasonably optimistic with a plentiful pipeline of work. This is tempered by uncertainty of future recession caused by the cost-of-living crisis and unprecedented energy prices affecting consumers and industry alike.
- 4.5. Whatever the forecasters view the immediate future to hold, the overall picture can, at best, be described as uncertain. Contractors tied into fixed price contracts prior to the recent price surges are most at risk as they deliver contracts that were costed some time ago. Those currently tendering or in contract negotiations have more flexibility to find solutions as they are aware of the volatile market conditions and can negotiate accordingly.
- 4.6. Large construction companies with enough capacity to absorb some costs will do whatever they can to weather the storm within fixed-price contracts, but it seems inevitable that much of the risk will be passed along the sub-contract chain. This in turn puts strain on smaller contractors and their supply chains which may be less robust, having only just recovered from the fallout of the COVID-19 pandemic.
- 4.7. WPPN 09/21 advises that actions should seek to avoid the wholesale transfer of risk along the supply chain which could mean that SMEs are saddled with the risk
- 4.8. More collaboration between clients and contractors is required to find agreeable solutions and this seems to be a trend that is increasing. Innovative approaches to procurement, alternative material use, and more localised sourcing are increasing as options to combat prolonged supply issues.
- 4.9. From a Portfolio perspective, the red and amber concerns will be continually monitored and over time as any issues arise along with associated change requirements, change notifications and change requests will be submitted to the PoMO and reported/escalated accordingly to stakeholders as per the SBCD change procedures.
- 4.10. Due to the staged nature of programme and project maturity within the portfolio, project teams will be in different positions when assessing the likely impact of inflation and construction costs. For example, within the Swansea Waterfront programme, the 71/72 Kingsway element is being delivered according to a fixed-price contract, with the contractor now expecting to manage a potential £2-3m increase in costs. However, Campuses are still in the design stage where cost increases and inflation can be factored into the design process from the outset. Other projects are somewhere in between.
- 4.11. Although there are a number of mitigating options available to project leads, the common approaches to address the funding shortfall are to:
 - a) Seek more funding
 - b) Revisit the construction brief
 - c) Open dialogue with contractors
- 4.12. Currently, sources of extra funding to support existing project delivery are not clear. One potential purpose of this appraisal is to raise the matter with UK Government and Welsh Government as City Deal sponsors to seek advice.

- 4.13. Altering the specification and reducing floorspace may affect the projects' ability to achieve its intended targets; that may be attracting tenants and thus achieving rental income, being able to deliver jobs or being fit for original intended purpose.
- 4.14. Those projects that are in early procurement stages are assessing the procurement pathways available and are entering into dialogue with contractors to manage any cost issues as far as is practical.
- 4.15. The PoMO continues to monitor the impact of inflation, cost and effect of mitigating actions. Any changes will be recorded via the change notification process with any significant change being managed via the change request procedure.
- 4.16. A Construction Costs/Community Benefits sub-group has been formed to allow programmes and project to share best practice and discuss lessons learned. This sub-group will report to the PoMO and Project Leads meeting and Programme (Portfolio) Board.

5. Assumptions

- 5.1. Current estimates (Aug 2022) have been provided by projects, these have been identified where current tender prices have been provided. Cost inflationary estimates have been used where projects are pretender.
- 5.2. Inflation rates have been applied to demonstrate projected estimation figures. Building Cost Information Service ([bcis.co.uk](https://www.bcis.co.uk)) indices were used to calculate projected estimations for future years (2023/24 – 3.2%, 2024/25 – 3.9%). These indices are industry specific and were deemed most appropriate to apply.
- 5.3. Inflationary rates are estimated and where Building Cost Information Service indices have been used these by their nature do not account for volatile or unexpected adjustments.
- 5.4. All forecasting within this report is only current on the day of writing, given the uncertainty and volatility previously discussed all future construction costs will vary from the forecast below and may potentially increase further prior to contract award or during delivery.
- 5.5. HAPS and Skills and Talent have been omitted from assessment due to the specific nature of their delivery.

6. Portfolio Review

- 6.1. Currently the portfolio is demonstrating a £31m increase in construction costs. These costs are then expected to be managed by Local Authorities and Lead partners, cost of which are outside the original budget allocations
- 6.2. The current estimation (August/November 2022) has been derived using actual costs, current tender pricing and cost estimation. These are based on actual and anticipated delivery timelines i.e. build of infrastructure.
- 6.3. Future projections have been derived utilising Building Cost Information Service indices.
- 6.4. Future zones/phases in respect of the life science projects (Pentre Awel and Campuses) have been omitted as SBCD funding is not directly utilised to develop these and due to their nature, a reliable estimate is unobtainable at present.
- 6.5. The following tables describe the current situation (August-November 2022) and any mitigations with potential consequences

<u>Programme/Project</u>	<u>Construction Estimate (Per BC) (£)</u>	<u>Current Estimation (Aug 2022)(£)</u>	<u>Variance (£)</u>	<u>Development Position</u>
<u>SILGC</u>				
Bay Technology Centre	8,500,000	8,883,000	- 383,000	Delivered
SWITCH	15,000,000	17,564,046	- 2,564,046	Estimated
Advanced Manufacturing	17,200,000	21,595,189	- 4,395,189	Estimated
	40,700,000	48,042,235	- 7,342,235	
<u>Pentre Awel</u>	79,000,000	86,000,000	- 7,000,000	Procured
<u>Yr Egin</u>				
Phase 1	14,868,348	14,868,348	-	Delivered
Phase 2	10,301,653	12,956,872	- 2,655,219	Estimated
	25,170,001	27,825,220	- 2,655,219	
<u>Swansea Waterfront - Innovation Matrix/DLF & Precinct</u>				
Innovation Matrix/DLF	13,232,099	15,984,542	- 2,752,443	Estimated
Innovation Precinct	17,424,458	21,092,933	- 3,668,475	Estimated
	30,656,557	37,077,475	- 6,420,918	
<u>Campuses</u>				
ILS Innovation Centre - Singleton	12,790,000	14,451,217	- 1,661,217	Estimated
ILS Innovation Centre - Morriston	2,210,000	2,497,300	- 287,300	Estimated
	15,000,000	16,948,517	- 1,948,517	
<u>PDM</u>				
Pembroke Dock Infrastructure	41,593,611	45,879,000	- 4,285,389	Estimated
	41,593,611	45,879,000	- 4,285,389	
<u>Digital Infrastructuionre</u>	20,500,000	22,097,114	- 1,597,114	Estimated
Net Total	252,620,169	283,869,561	- 31,249,392	
<u>Swansea Waterfront - Arena & Digital Village</u>				
Digital Arena	95,045,842	89,203,265	5,842,577	Delivered
Digital Village	49,648,253	48,540,125	1,108,128	Procured
Total	397,314,264	421,612,952	- 24,298,688	

Programme / Project	Shortfall	Mitigating Actions	Action status	Likely Impact of Mitigation
Campuses	£1,948,517	<ul style="list-style-type: none"> Explore further funding opportunities Reduction of scope i.e. smaller footprint 	Potential Potential	Significant decrease on scope could affect available office space and associated income
Swansea Waterfront a) Digital District & Digital Village	£3m (est. between £2-3m)	<ul style="list-style-type: none"> Fixed price contracts with tier 1 contractor 	Actual	Possible impact on the subcontractors working on this scheme, many of which will be local firms.
Swansea Waterfront b) Innovation Matrix and Precinct	£6,420,918	<ul style="list-style-type: none"> Value engineer project delivery model. Assess viability of alternative funding sources. Reduce volume of infrastructure. Potential change of delivery mechanism for Innovation Precinct to better suit the economic/market environment as well as to take advantage of any partnership opportunities. 	Actual Actual Potential Potential	<ul style="list-style-type: none"> Change to refurbishment (rather than new build) model for Innovation Precinct (likely). Potential reduction in current benefits projections Change in funding arrangements and amounts for both projects. Collaborative approach likely to be developed with key private/public sector partners.
Yr Egin 2	£2,655,219	<ul style="list-style-type: none"> Value engineer infrastructure Secure further funding Reduce volume of infrastructure Change phase 2 to align to current regional demands. 	Potential Potential Potential Potential	<ul style="list-style-type: none"> Change of delivery model, potentially leading to lower capital spend. Potential change to overall project outcomes and benefits through reduced volume of infrastructure.
Pentre Awel	£7m	<ul style="list-style-type: none"> Value engineering exercise undertaken. Changes to materiality and some omissions undertaken. Reduction of building area by 750 sqm. Local authority to invest further capital into the project. Increased use of digital and remote delivery for education and training, health and research/innovation. 	Actual Actual Actual Actual Actual	<p>Manageable and appropriate changes to the building design and associated infrastructure.</p> <p>Within the City Deal demise:</p> <ul style="list-style-type: none"> Reduced space to deliver education, skills and training activities Some reduction in business area. Mitigatable via Zone 3 business expansion centre Removed conferencing facility <p>Research, health and innovation spaces have been maintained</p>

SILCG	£7,342,235	<ul style="list-style-type: none"> Review accordingly and see what can be delivered at current rates within the previously agreed budget potentially doing less for more (cost). Look to obtain further funding. For SWITCH, the overall budget for the project is £20M split into £15M build and £5M for specialist equipment. If projected build costs are >£15M then there is a £1M buffer available from the specialist equipment budget to utilise to offset cost increases 	<p>Potential</p> <p>Potential</p> <p>Potential</p>	<p>Nil response in relation to previously highlighted AMPF shortfall of circa £4.395m</p> <p>Nil response in relation to BTC shortfall £383k</p> <p>Less funds available for specialist equipment (SWITCH)</p>
Digital Infrastructure	£1,597,114	<ul style="list-style-type: none"> Continue to monitor the situation and engage with fibre and mobile industry to better understand the situation. Continue to work with the private sector, encouraging and facilitating their investment in our region. Helping to ensure the private sector goes as far as possible with their investment. Seek to secure more public funding towards the regions needs and ambitions for fibre and mobile infrastructure. If necessary, reduce our delivery scope to fit the budget i.e. less infrastructure deployed for the funding we have available. <p>Still relatively confident we will deliver on the key investment objectives of the programme.</p>	<p>Actual</p> <p>Actual</p> <p>Actual</p> <p>Actual</p>	<p>To be confirmed</p>

PDM	£4,285,389	<ul style="list-style-type: none"> • Competitive tenders and further review of Best and Final with additional scrutiny. • Innovation in designs to deliver outcomes and outputs at less cost which has removed an additional £10m from the current estimate above. I.E without this the forecast would have been circa £55m. • Innovative trading and phasing within overall programme to deliver the individual phased outputs and outcomes. • Additional funding sought with WEFO and secured partial help. 	<p>Actual</p> <p>Actual</p> <p>Actual</p> <p>Actual</p>	<p>The 4 bullet points get us to the Outputs as defined within the Final business case and on track to get to the outcomes.</p> <p>The potential Shortfall is still circa £4.3m as above and we are reviewing future phases over 2023 to see where we can apply more of the points to potentially close this gap.</p>
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7. Conclusion/recommendations

- 7.1. The funding gap identified is based on inflationary pressures and rising construction costs with a current estimated funding gap of £31.2m. This gap is based from the anticipated or actual difference in costs from approved outline business case to date (Aug-2022).
- 7.2. The Gleeds Autumn review recommends that “As the challenging backdrop persists, it remains important to make projects attractive to the supply chain to obtain the best prices. Mitigation measures seen include:
- Proactive negotiation with preferred main contractor/subcontractors/suppliers to work through risks and issues
 - De-risking of projects as much as possible through surveys and enabling packages
 - Phasing/splitting of large projects to reduce risk via shorter programme length
 - Early orders to secure materials/products to protect the programme and to obtain cost certainty
 - Booking of key resources/teams to secure the best for the project
 - Use of fluctuation clauses, prime cost (PC) sums, provisional sums, index linking of material supply costs, etc.
 - Increased understanding of pipeline and financial standing
 - Consideration of alternatives in case of sourcing difficulties
 - Being open to different suppliers to ensure competition.

While value management is always important, it is particularly so at a time when budgets are under pressure. Regular reviews should be undertaken to look for opportunities and to ensure the best use of available resources.”

- 7.3. This report has been produced for consideration by SBCD Programme (Portfolio) board.
- 7.4. The Programme (Portfolio) board are now required to assess and agree that the funding gap, mitigations and impact are appropriate and share the report with key stakeholders including both Governments for discussion.
- 7.5. In November 2022 the Programme (Portfolio) board resolved that the in-house Governance structure within each Local Authority to be made aware of the potential over spend/issues and the PoMO will continue to appraise Programme Board of current situation through Monthly and Quarterly Monitoring. Programme board to continue to review all new and updated information as provided and continue to review mitigations and potential course of action to resolve any funding gaps that are confirmed and/or do not have a resolution at a project/programme level.