

New delivery model: Integrated Project Insurance

Trial project: Derby Silk Mill - Museum of Making: Case Study 2

Key specific objectives

- Completion in the spring of 2020 at a cost which is at or below the agreed target cost
- An exceptional and inspiring visitor experience in a high-quality environment
- Exhibition display and interpretation that create 100% access to collections
- Exhibition displays that can evolve and be remade on-site to create new visitor experiences and stay relevant
- Flood mitigation successfully implemented
- High quality of design and materials in keeping with conservation requirements

Stage at which first report will be published:	Kick off meeting	Brief / Team Engagement	Decision to Build	Build and Occupy
Cost saving basis:	Investment Target	Challenging cost target	Agreed Target Cost	Outturn cost

Daniel Defoe's 'A Tour thro' the Whole Island of Great Britain' (1724-27) records:

"This engine contains 26,586 Wheels, and 96,746 Movements, which work 73,726 yards of Silk-thread, every time the Waterwheel goes round, which it does three times in one Minute."

Derby Museums:

How might we use the making of the Museum of Making, to engage people's heads, hearts and hands - empowering them to be the creators, innovators and makers of the future?



Approach to the new Museum of Making from Cathedral Green

Key facts

Project title	Derby Silk Mill – Museum of Making
Client	Derby Museums
Investment Target	£15.830m
Initial Target Cost	£13.325m
Form of project	Heritage extension and refurbishment
Independent facilitation and risk assurance	IPInitiatives Technical: BLP Financial: Artelia
Alliance Members	Derby Museums Bauman Lyons, architects Preston Barber, engineering GCA (UK) [replaced Adept], structural Speller Metcalfe, constructor Derry, building services Leach Colour [became The Creative Core Group], exhibitions
IPI Brokers	Griffiths & Armour
Other Key Suppliers	Garvey: demolition and asbestos removal Roger Bullivant: piling Adstone Construction: steel frame Façade & Glazing Solutions: curtain walling and glazing Swift Roofing Services, new roofing NRA Roofing: existing roof works Concrete Renovations: pillar restoration Independent Scaffold Services: scaffolding MSW Steel Decking UK: metal deck and concrete J&P Carpentry: carpentry MG Olympic: architectural metalwork

Executive summary

Derby Museums commissioned exhibition specialist Leach and architects Bauman Lyons with a design team to develop their vision for the Silk Mill as a “museum of making” for the 21st Century. Heritage Lottery and Arts Council funding was eventually secured, supplemented by funds from Derby City and local communities. Inevitably the brief for the extension and refurbishment project had developed into many various “success criteria”, and Bauman Lyons and Derby Museums decided that these could only be met by a fully collaborative “alliance” of designers, constructors and specialist contractors (including exhibition/digital specialists) appointed under the Integrated Project Insurance model. The necessary arrangements were made to secure the acceptance of this transition by the existing consultants; the new partners were selected; and the alliance was formed. Because the Silk Mill is located in the flood plain the insurers who had underwritten the first IPI policy for Dudley College Advance II were not prepared to be involved, and therefore a “hybrid” alliance contract was agreed which maintained the essential “no blame/no claim” undertakings and gain/pain-share mechanisms, but changed the IPI policy into an “owner-controlled” policy under which IPI’s cost overrun cover beyond the excess was replaced by professional indemnity insurance protection in case the client exercised its right to claim for such costs.

Project summary

Project timeline

- 2012: Derby Museums established as an independent charity to manage sites and collections on behalf of Derby City, following closure of the Derby Industrial Museum
- 2013: creation of a prototype museum on the ground floor to test concept through an innovative “Re-make the Museum” process under public and stakeholder programme
- July 2014: Derby Museums awarded Arts Council England Major Partner Museums status
- May 2015: Heritage Lottery Fund Stage 1 approval for £9.4m
- January 2016: Arts Council England Capital funding Stage 1 approval for 2.58m, enabling 18-month development stage to begin
- March 2016: Appointment of core design team, including Leach exhibition specialists and Bauman Lyons architects who assisted Derby Museums with potential solutions which were sufficiently loosely defined to enable a fair OJEU process to follow
- May 2017: Planning submission with Conservation Plan; **decision that the IPI model is to be used for this project and IPI initiatives engaged**; OJEU Notice; Prequalification Questionnaire issued to applicant constructors and specialist contractors
- June 2017: RIBA Stage 3 Report: Design & Access Statement and Heritage Impact Statement; Stage 2 bid to Heritage Lottery Fund; Industry Day for bidders
- July 2017: Issue of Invitation to Tender to selected constructors and specialist contractors
- September 2017: Stage 2 Heritage Lottery Fund approval
- October 2017: Full alliance team appointed
- November 2017: Planning approval
- December 2017: Commercial alignment of alliance partners completed
- January 2018: Phase 1 design by alliance begins
- June 2018: Alliance contract (hybrid) agreed and signed
- July 2018: target completion for Phase 1
- October 2018: Inception of Owner Controlled Insurance policy for commencement of Phase 2, design development and construction
- December 2018: Late resolution of 25-year lease agreement with Derby City Council and wayleave agreement with Western Power
- May 2019: admission as a trial project under the Cabinet Office/Constructing Excellence Trial Projects Delivery Programme
- May 2020: target completion
- September 2020: final completion

Client objectives and vision

“There is a growing awareness in the construction sector that to improve performance key parties need to be brought together much earlier and relationships need to be significantly more collaborative. For the Museum of Making with our focus on co-operative working this is an essential transition and an innovative and new method of alliancing will suit our thinking. It is proposed therefore to use the Integrated Project Insurance (IPI) Model to deliver the project because it aligns the team’s interests and incentivises them to focus on outcomes which maximise the benefit for all stakeholders. This enables the whole team to work collaboratively under a single contract and insurance. The team form a Board under a new Alliance Contract and are incentivised to work together with all parties having a share in gain/pain that is linked to common not individual performance.”

Bauman Lyons, RIBA Stage 3 Report
Rev1, June 2017

Vision

The aim was to create the Museum as a flexible, creative and inspirational hub with technology and tools to build people’s skills, confidence and creative talent and to inspire the young creators and makers of tomorrow. The Arts & Heritage programme is to offer opportunities for audiences to participate in and enjoy contemporary art and design to creatively re-interpret the past, tell its many stories and respond to the sound of diverse voices.

Strategic Brief

The strategic brief was to create an inspirational new museum, revealing the whole building for the first time and re-introducing manufacturing to the site. It will celebrate Derby’s heritage of makers through the internationally, regionally and locally significant collections. It will create new co-working, maker and workshop spaces, with facilities for use by the makers of today and tomorrow. The project’s overarching themes are STEAM-Powered (Science, Technology, Engineering, Arts and Maths), driven by the significance of the site, the building and the collections it contains; combined with the context of Derby and needs and motivations of local people, communities, businesses, organisations.

Success Criteria

“We have chosen the IPI model to reflect our values. Co-production and human-centred approaches are integral to the success of this project:

- *Staged completion of building zones including workshop spaces at an early stage to support the build of fit out and exhibition*
- *Active involvement of volunteers and stakeholders in co-producing the Museum of Making*
- *Advocacy for new and diverse audiences*
- *Integrated programme of commissions for artists and makers*
- *Co-production and human-centred ethos, including openness to prototyping and the ability to respond proactively to change of circumstances and needs.”*

Derby Museums

The specific success criteria are numerous, falling under these headings:

Building and Exhibition: 24 No.

Funders’ requirements:

- Heritage and Exhibition: 21 No.
- People Skills: 14 No.
- Local community: 23 No.

Phase 1

The narrative below builds upon that in the Prospectus which may be accessed via <http://constructingexcellence.org.uk/wp-content/uploads/2018/04/201803-Prospectus-rev-1-Mar-2018-002.pdf>. and the first Case Study for this project

Design progress and BIM

Because the design consultants had worked on their designs for almost 2 years using the medium of 2D drawings, the transition to a digitally led BIM process was initially disruptive to continuity. The reality of a common digital platform and an open-book methodology occasioned concerns initially amongst the incumbent designers' professional indemnity insurers, but these were progressively allayed because Derby Museums were unequivocally supportive of the open-book no-blame approach and, as professional indemnity insurance claims would need to be client initiated, this adequately de-risked the project in the eyes of the partners and their underwriters. Further, the initial reservations gradually gave way to a realisation that the collaborative approach was not only less risky and more efficient: it was also enjoyable.

The early involvement of the constructor and through them the demolition and asbestos removal specialist contractor enabled the alliance to investigate ground conditions early in Phase 1. This gave forewarning of difficulties and led to the decision to retain the ground floor and avoid the cost and delay of significant asbestos removal. The benefits of the "Plan in a Day" workshops came easiest on the civic hall because it was a new build; but the fact that the constructor and specialist mechanical & electrical contractor had worked together on the first IPI project eased the programming challenges.

It is during the formative Phase 1 stage that solution pioneering can be cost-effectively pursued, and the nature of this project was such that close involvement by Derby Museums was essential. The benefits of close collaboration were articulated by Hannah Fox, Director of Projects and Programmes, Derby Museums:

"Team members share their skills and knowledge, and develop a better understanding of the client's goals and ambitions, leading to greater than normal generosity with their time".

In this environment where all the skills are around the table Derby Museums were able to empower the alliance to find the solutions and avoid prescriptive specifications (such as for lifts) which might be either impossible or costly to meet in this building.

As maintenance of the completed museum will be the responsibility of Derby City Council, steps were taken to establish system information requirements in parallel with design development in Phase 1. This focus was initiated by the independent facilitator and welcomed by Richard Roper, Building Engineering Manager at Derby City Council because it drives commissioning programming and documentation for Soft Landings.

Information management was handled through Google Drive, assisted by Trello software. The team would however have benefitted from further IT capabilities for target cost modelling and opportunity & risk management

Project culture, alliance management and leadership

When the incumbent designers were joined by the new partners at the beginning of 2018 and the alliance principles were agreed, the importance of collaboration, displacing traditional silo mentalities, was genuinely recognised. Derby Museums in the person of Hannah Fox, Director of Projects and Programmes, were totally committed to collaboration, and as a culture this was well sustained. At a technical level however there were occasional hankerings back to proposals that had been consensually superseded, causing some "disconnects" between a vibrant Integrated Project Team ("IPT") and the alliance board. By agreement with Derby Museums ResoLex was introduced to minimise the risk of misunderstandings and help build trust, and these measures resulted in a number of potential overspends being avoided.

Phase 1 cont'd

There was a reluctance to publish a detailed programme for Phase 1, partly because of the complexity of assembling and confirming programmes for such an invasive redevelopment and partly because information management was recognised to be an issue. On-going investigation and preparation works revealed unexpected groundworks challenges in respect of the extent of contamination whereupon steps were quickly taken to recycle activities to mitigate the delays. Phase 1 also suffered from late engagement with some key suppliers, and information flow continued to be an issue.

Debates enabled by the collaborative culture were not readily managed down to timely decision-making. As is appropriate, the source of solutions, including rethinking previous proposals and innovation, was the IPT, and it fell to leadership in the IPT to bring these to the alliance board for review and ratification. It took time and a degree of facilitation/coaching for the alliance board to recognise its role of oversight and to empower the IPT. Nonetheless the ethic of collaboration was not under threat; application of the alliance principles was regularly reviewed by the independent facilitator; the team members were able to alleviate pressure with enjoyment; and social events were arranged, including attendance at the Silk Mill annual funding Ball.

The benefits of insurance backed alliancing were summarised by Irena Bauman, architect as below:

"The IPI model aligns with many of Bauman Lyons core values in securing fulfilling work and in working collaboratively. There is very little administrative work; digital tools mean that key decisions and actions are recorded and shared online without the need to take copious notes. Practices learn a great deal about buildability and the logistics of construction through the collaborative process. The shared knowledge and expertise of the project team is an invaluable resource: problem-solving is quicker and easier in a supportive collaborative environment. The practice benefits from a reliable cash flow, receiving monthly payments from the project bank account".

Monitoring and control of time and cost

A target cost of £1.056m and a target finishing date of 6 July 2018 were agreed for Phase 1.

Phase 1 provided progressive opportunity to investigate and open up the ground and existing structure, and more issues including an unforeseen extent of asbestos were identified. The IPT's approach to these issues was exemplary: instead of seizing upon them as justification for "traditional" extensions of time, they embarked without hesitation on exploring both technical and logistical avenues to mitigate the delays. As will be seen in the third case study, this approach continued with great effect in Phase 2.

The "trinity" principle was applied, balancing quality, time and cost in the IPT's decision-making in accordance with the agreed success criteria. The bigger picture was also under regular review by the alliance board: an opportunity & risk register was managed as a "live" record focussed, not on recording, but upon action:

Opportunities (categorised under process, programme, design/fabric, financial, procurement, site delivery, MEP): likelihood, consequence, benefit to project, value, moderated value, notes and status

Risks (under the same categories): likelihood, consequence, risk to project, value, moderated value, mitigation plan, owner, notes and status

IPI inception

Explanation was given in case study 1 how the context of a refurbishment project in the flood plain dictated a moderated risk profile which in turn required an “hybrid” alliance contract and an owner-controlled insurance policy which did not offer the cost overrun and latent defects covers inherent in a “pure” IPI policy. In the event of a cost overrun beyond the limit of pain-share, Derby Museums, without the protection of the cost overrun cover, had the right to claim against its alliance partners – who in turn had the protection of their professional indemnity (“PI”) insurances. Lengthy discussions took place with the PI insurers whose concerns related to the lack of definition of individual roles in a collaborative process, but were eventually allayed because of the open-book disclosure and claims limitations embedded in the alliance contract.

This was in contrast to the way in which Derby Museums and its partners approached the task of agreeing the allocation of gain and pain-share: it took just two meetings to agree the two principles that should guide the quantification: (i) the relative importance of each member for the achievement of the strategic brief and success criteria, and (ii) the degree of pain-share that was affordable given the partner’s size. These were balanced and the allocations were duly agreed.

Derby Museums had to carry the support of the principal funders before Phase 2 could be released, and it should be stated that the Heritage Lottery Fund was highly supportive of the IPI process. Nonetheless, it took until December 2018 to sign off Phase 1, an agreed Target Cost of £13.370m and the above arrangements for IPI inception, with the result that Phase 2 started in January 2019.



Exhibition render of the Throwing Room

Guidance on the IPI Model

Guidance on the IPI Model is complementary to this case study, and is accessible at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/283331/IPI_Guidance.pdf

Of particular interest will be Section 9 which identifies the benefits the IPI Model is expected to bring for:

- The Client Group
- Lead Constructor/Project Manager/Design Consultants
- Specialist Contractors
- Other supply chain members
- Insurers
- Funders
- The Local Community

For change to take off and become “Business as Usual”, there must be seen to be benefits for all parties involved. The outcomes in this context will be reported at the end of the project.

Miscellaneous

Authors

This case study has been developed for Constructing Excellence by Martin Davis, as IPI Mentor, with invaluable assistance from his IPInitiatives colleagues Kevin Thomas (the Independent Facilitator) and Louise Lado-Byrnes (the Alliance Manager), and the members of the Alliance.

Background: Trial Projects programme

The Government Construction Strategy aims to change the relationship between clients and the entire supply chain within the industry. The trial projects perform a central role in delivering the Strategy’s sustainable reduction in costs and have been testing three new procurement models (Cost-Led Procurement; Integrated Project Insurance; Two Stage Open Book) that were proposed by industry and developed by a joint task group. Case study reports are therefore an output of monitoring the progress and outcomes of the trial projects. They are produced at four stages: Kick-off Meeting; Brief/Term Engagement; Decision to Build; Build and Occupy. Other case study reports can be found at:

<http://constructingexcellence.org.uk/cabinet-office-trial-projects/>

Project contacts

For further information on Insurance Backed Alliancing under the IPI model or to introduce a potential trial project, please contact Martin Davis, IPI Mentor for the Cabinet Office, at martin.davis@ipinitatives.com or Kevin Thomas at kevin.thomas@ipinitatives.com or Louise Lado-Byrnes at louise.lado-byrnes@ipinitatives.com

Successful applicants who are accepted onto the Cabinet Office’s Trial Projects Delivery Programme will then have access to the latest versions of the Procurement documentation and system, Alliance Contract, Supplier Alliance Subcontract and IPI Policy.

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Get involved

Constructing Excellence welcomes all organisations that share our values and mission. Get in touch to find out how your organisation can become part of the UK's leading movement for change devoted to delivering excellence in the built environment.

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