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STRATEGIC PROJECTS

Innovation Management Plan

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Learning Legacy Document

Contents

1	Purpose	4
2	Overview of the Innovation Programme	4
3	Innovation Team Organisation	4
3.1	Crossrail Innovation Forum.....	4
3.2	The Innovation Working Group.....	5
3.3	The Innovation Management Team	5
3.4	Innovation Champions.....	6
4	Promoting Collaboration.....	7
5	Innovation Management System.....	7
6	Governance.....	7
6.1	Delegated Authority	8
7	Valuing Innovation	8
8	Measuring Benefits	9
9	Reference Documents.....	9
10	Standard Forms / Templates	9

Learning Legacy Document

1 Purpose

This plan explains the how the innovation programme will be managed. It addresses:

- the organisational structure of the innovation programme
- the roles and responsibilities of the Innovation Team
- the governance principles of the Innovation Management System (IMS)

2 Overview of the Innovation Programme

Much has been done over the past two decades to promote innovation in construction, through the adoption of lean design and production techniques, modular and pre-fabrication assemblies, integrated project teams and digital technologies. However, there is more that can be done. Raising the performance bar to the next level requires strategic efforts to promote innovation and learning from one project to the next.

In its endeavour to deliver a world-class railway, Crossrail has developed a strategy for innovation which through the approach to design, construction, maintenance and operations is intended to create a legacy for the wider industry.

Some of the UK's previous major projects (e.g. Channel Tunnel Rail Link, Heathrow Terminal 5 (T5) and the London 2012 Olympics construction) have taken important steps in 'raising the bar'. However, efforts have often been informal and lessons have not been fully captured. Previous projects focused on creating novel approaches to project delivery (e.g. BAA's T5 Agreement) rather than establishing a process to promote innovation within and beyond the life of the project. Crossrail has arguably broken new ground in UK construction by being the first organisation to develop a strategy and process for managing innovation in a major project environment.

3 Innovation Team Organisation

The intent of the innovation programme is to encompass all parties involved in the Crossrail project. For each, the roles and responsibilities in the innovation programme are defined in this section.

3.1 Crossrail Innovation Forum

The Crossrail Innovation Forum (CIF) is the executive level group that provides strategic direction for the governance and funding of the innovation programme.

The CIF will principally consist of four representative groups with a Crossrail non-executive director as its chairperson; meeting frequency will typically be once every 6 months or as needed if critical decisions are required in relation to a specific innovation project or activity:

Crossrail Executive – members of the executive team, who are able to connect the findings or benefits of innovation activity to the scope and hence running of the Crossrail programme

Supply chain – senior representatives from contractor organisations who have a direct interest in innovation. It is envisaged that there will be regular attendance from at least two contractor organisations, but this will be reviewed at least annually and refreshed as appropriate. Attendance by specific contractors will be encouraged on a part-time basis for particular innovation activity.

Imperial College London – senior academic(s) to act as 'neutral' brokers, who can help to shape the Crossrail innovation (and research) agenda, provide expert advice and input into the development of the Crossrail Innovation Strategy, as well as provide access to resources to support specific innovation activity.

██████████ shall act as the sponsoring **Director**, providing direction to the programme and will report to the executive team at the Crossrail Innovation Forum (CIF).

3.2 The Innovation Working Group

The Crossrail Innovation Working Group (CIWG) is chaired by [REDACTED] and constitutes of senior representatives from the Supply Chain, the Innovation Programme Manager, Imperial College London and guests from other industries with the objective of steering and governing day-to-day innovation activity on the innovation programme and supporting the innovation activity on Crossrail. The group is also responsible for evaluating entries made to the innovation portal and, where appropriate, recommending investments to the Crossrail Innovation Forum (CIF).

3.3 The Innovation Management Team

The Innovation Team (blue in Figure 1.0) is responsible for nurturing an environment in which innovation can prosper. The team is responsible for the capture, review, programme management and reporting of the innovation ideas for Crossrail.

3.3.1 Innovation Programme Manager

Provides strategic management of the innovation programme to ensure the objectives of the Crossrail Innovation Strategy are delivered.

3.3.2 Innovation and Reporting Consultant

Responsible for reporting the status and health of the innovation programme including finances, metrics, programme and board communication; preparing and minuting of the evaluation process; production of the innovation remits and checklists; and reporting/monitoring during the implementation of invested innovation projects; development and administration of the online Innovation Management System used to track the progression of ideas.

Contributes to the management of innovation initiatives under the direction of the Programme Manager.

3.3.3 Innovation Coordinators

Responsible for facilitating collaboration between the Innovation Site and Project Champions, and helps build relationships between the champions and other parts of Crossrail. They are responsible for providing guidance to the Functional Champions, Project Champions and Site Champions during the discovery of an innovation idea. This includes facilitating the engagement of technical specialists to develop an idea, monitoring progress and providing regular status updates to the Innovation Programme Manager.

3.3.4 Innovation Business Analyst

Manages the Innovation Bank Account and provides the financial management of the programme and financial assessment of the benefits an innovation idea.

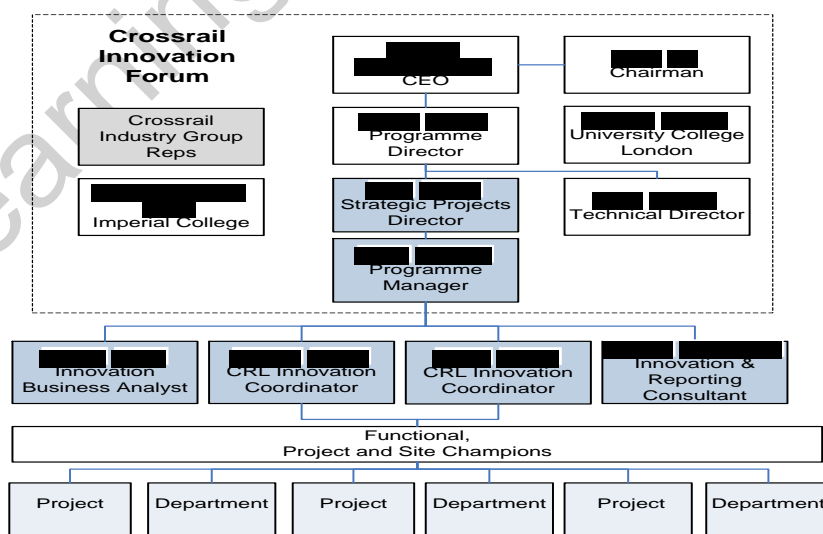


Figure 1: Innovation Team Structure

3.4 Innovation Champions

Supporting the Innovation programme are a community of champions embedded within the Sites, Projects and Functions. This innovation community are ambassadors of the innovation programme through the identification, discovery and development of innovation ideas. Figure 2 illustrates the framework of this network and the principle roles of each group.

3.4.1 Site Champions

Located within the Contractor Project team, the Site Champions identify and share innovative practices occurring on site. The Site Champions are responsible for securing the support with the relevant Project and Functional Champions and work with their project leadership team to select those ideas to be pursued in preparation for the next competition. They are usually the primary contact during the trialling of ideas, providing feedback on projects undertaken to the innovation community and reach back to specialists during the discovery and development of ideas.

3.4.2 Project Champions

Located within the Crossrail Project team, the Project Champions identify and share innovative practices occurring on site. The Project Champions are responsible for securing the support with the relevant Functional and Site Champions and work with the Project Managers to select those ideas to be pursued in preparation for the next competition. They are usually the primary contact during the trialling of ideas, providing feedback on projects undertaken to the innovation community and reach back to specialists during the discovery and development of ideas.

3.4.3 Functional Champions

Located in a Crossrail functional directorate, the Functional Champions identify and share innovative practices occurring within their specialist area. The Functional Champions collaborate with the Project and Site Champions in the discovery and development of innovative ideas, reviewing innovative ideas and providing sponsorship as necessary.

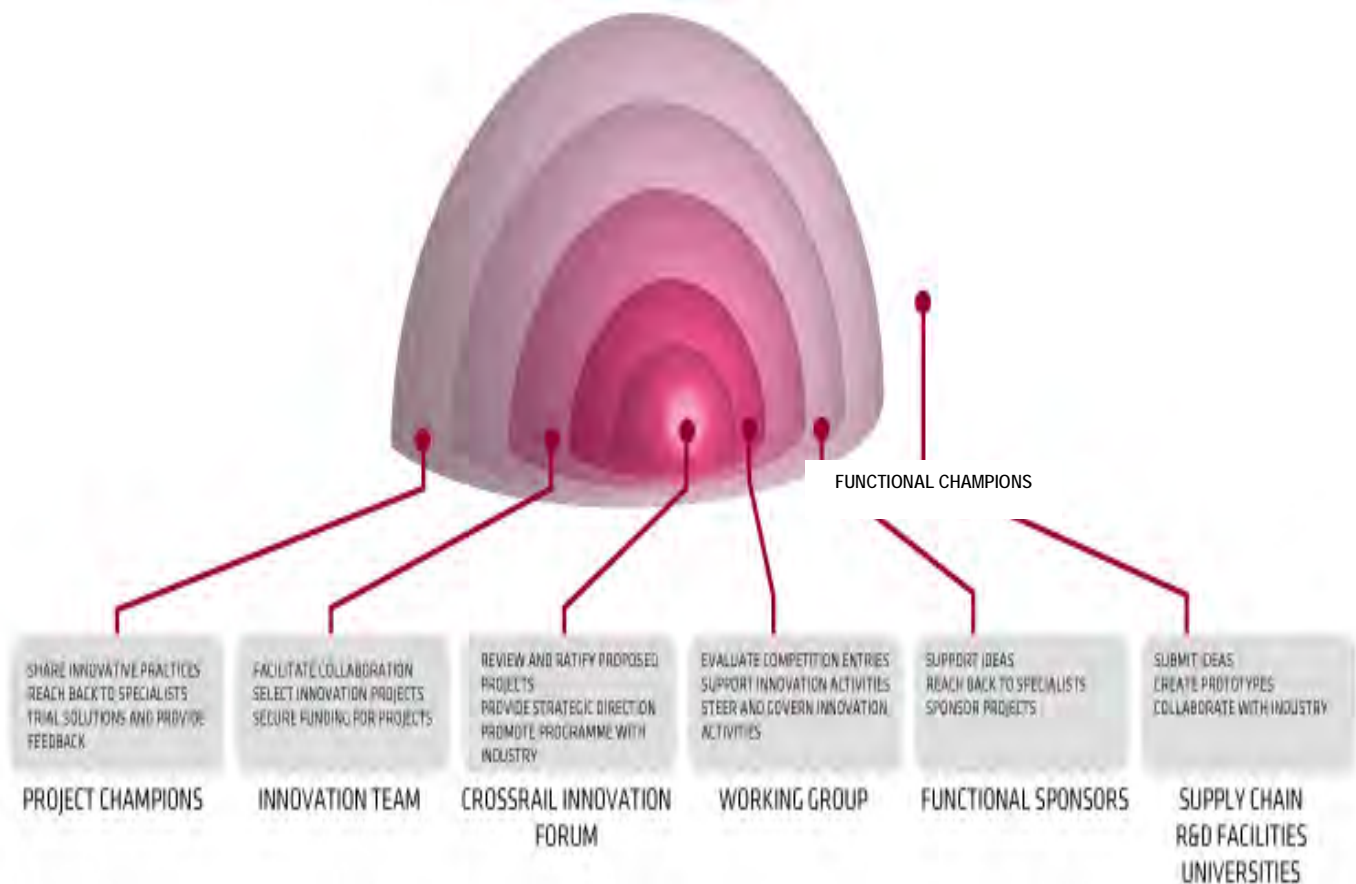


Figure 2: Innovation Network

4 Promoting Collaboration

The Innovation Team is responsible for creating an environment in which Site, Project and Functional Champions can find one another and create task groups to collaborate in the discovery and development of innovative ideas.

Crossrail staff already convene at a number of working groups, forums or conferences that provide the opportunity for specialists to meet and discuss issues relating to the delivery of Crossrail. As appropriate, innovation will become an agenda item at these meetings or create a dedicated innovation working group to identify innovation opportunities, discuss ideas submitted into the Portal, or discuss challenges that may require innovative solutions.

By raising the awareness of innovation ideas or projects within the programme through the sharing of emerging best practice, the Innovation Team can create a culture where innovation is valued and celebrated.

5 Innovation Management System

The Innovation Management Procedure (CRL1-XRL-Z-GPD-CR001-50023) describes an Innovation Management System (IMS) which has been developed to create an auditable trail for all innovation ideas submitted through the innovation portal.

The IMS provides a systematic approach to the administration, management, governance and up-to-date reporting of the ideas generated by the innovation programme. It has the capability to generate reports to provide information on the composition and progress of the innovation programme.

6 Governance

As referred to above, a key component of the IMS is the governance and decision-making around the innovations submitted into the portal.

The governance of the innovation programme is managed through a 'stage gate system' such that each innovation is considered before either being promoted or 'parked' for future projects. The 'gates' are used to assess each submission, undertake due diligence reviews, such that the scope and purpose of each innovation and all potential benefits and risks are factored into each decision. It also establishes an understanding of the idea's maturity and originality within the programme allowing for preparation towards Intellectual Property discussions and securing the desired outcome. Prior to investment authority or 'sanction', there is a four (4) stage process as follows:

Stage 1: Discovery - This gate provides an opportunity for the Champions to evaluate and report on the progress to date of individual ideas generated by their team to their manager. The Champions are supported by the innovation team throughout this process.

The evaluation will ensure that the idea's costs, benefits and risks (both upside and downside) are clearly understood; that any risk taken on is appropriately valued in the context of the delivery programme; and ultimately the idea is worthy of pursuing further.

In conjunction with the Project Manager, the Champion must decide to either:

- Return the idea to the discovery phase for further investigation by the idea task group;
- Park the idea for future consideration;
- Promote the sharing of the idea across the programme;
- Agree to implement the idea (i.e. investment is not required);
- Apply to the Innovation Programme Manager for seed funding (up to £10,000); or
- Submit the idea into the next round of Innovation Evaluation (i.e. where large scale funding is required (over £10,000)).

Stage 2: Innovation Evaluation - This gate provides a formal process by which ideas are shortlisted and recommendations are made to invest in implementing an innovation project.

The evaluation is only open for a limited time every 26 weeks. Entries should ideally be supported by a Project Manager, sponsored by the relevant Crossrail Functional Directorates and promoted by the most appropriate Crossrail Director. The entry will identify if there is an opportunity to apply for external funding.

The Crossrail Innovation Working Group will review all entries and select a shortlist of recommended Innovation projects.

As appropriate, entries will receive commendations where they promote one or more of the Crossrail Values of:

Inspiration – its in our power to change things for the better;

Respect – we treat people as we'd like to be treated;

Safety – we put safety first;

Collaboration – we're stronger together; and

Integrity – we keep our promises.

Any evaluation entries that fail to be shortlisted will be 'parked for future use' and feedback provided to the innovator via the Innovation Coordinator and relevant Champion.

Stage 3: Investment Authority – Any evaluation entry that is shortlisted by the Crossrail Innovation Working Group but seeks funding beyond the delegated authority limits (£10,000) of the Working Group or is considered to be complex (i.e. it involves the collaboration of two or more directorates and imposes risk to the programme) will be escalated to the CIF for ratification prior to a formal application to Investment and Change Subcommittee (ICSC). Otherwise the Innovation Working Group (chaired by the Strategic Projects Director) will approve funding applications.

All shortlisted competition entries will be evaluated to identify whether there is an opportunity for an application for external industry funding or whether the application requires authority from Investment and Change Subcommittee (ICSC). The Innovation Team will be responsible for the application of external industry funding or ICSC after the CIF have agreed in principle with the proposed strategy.

Stage 4: Implementation – Entries that receive investment are supported by an innovation remit which outlines the delivery strategy for implementation. The Innovation Project Manager is assigned to all invested projects and is responsible for the initiation of the project, undertaking the procurement, commercial and legal requirements such that the project can be transferred to a suitable party to implement on behalf of the Crossrail Innovation Programme.

6.1 Delegated Authority

The Innovation Programme Manager has the delegated authority from the Innovation Working Group to sanction the funding of the discovery of an innovation idea not exceeding £10,000 per idea up to a ceiling figure of £50,000 per financial year.

The Innovation Working Group has the delegated authority from the CIF to sanction the funding of innovation projects not exceeding £100,000 per project up to a ceiling figure of £500,000 per financial year.

All other funding applications require the ratification of the CIF and will require the formal application to Investment and Change Subcommittee (ICSC).

7 Valuing Innovation

Recognising and rewarding the effort required to succeed or indeed fail in the pursuit of innovation is an important aspect of the innovation programme. There will be a number of opportunities to recognise the merits of individual and team contributions to the Crossrail innovation programme, including internal communications (e.g. weekly blog) plus attendance at the CIF to showcase specific proposals. Equally, a rewards programme will be used as appropriate, with innovation badges and a periodic awards programme.

8 Measuring Benefits

Where applicable, for ideas that have been approved for funding, or published on the innovate18 platform, a benefit analysis (or a return on investment for funded ideas) will be undertaken to measure the potential impact that the idea could have on the programme.

This can be done in several ways; 6 Sigma analysis, cost engineer estimates, comparative analysis from baseline processes. A benefits model has also been drafted by an independent research analyst from Imperial College London to be used as a tool to help gauge benefits of any future projects, measuring the impact of the idea, as well as confidence levels of the estimates.

9 Reference Documents

Ref:	Document Title	Document Number:
1.	Innovation Management Procedure	CRL1-XRL-Z-GPD-CR001-50023
2.		
3.		
4.		

10 Standard Forms / Templates

Ref:	Document Title	Document Number:
A.	None	
B.		