



Oxford Circus Diagonal Crossing

Lessons Learned Report

March 2010

Document Control

This document is the lessons learned report examining the delivery of the Oxford Circus Diagonal Crossing.

Document History

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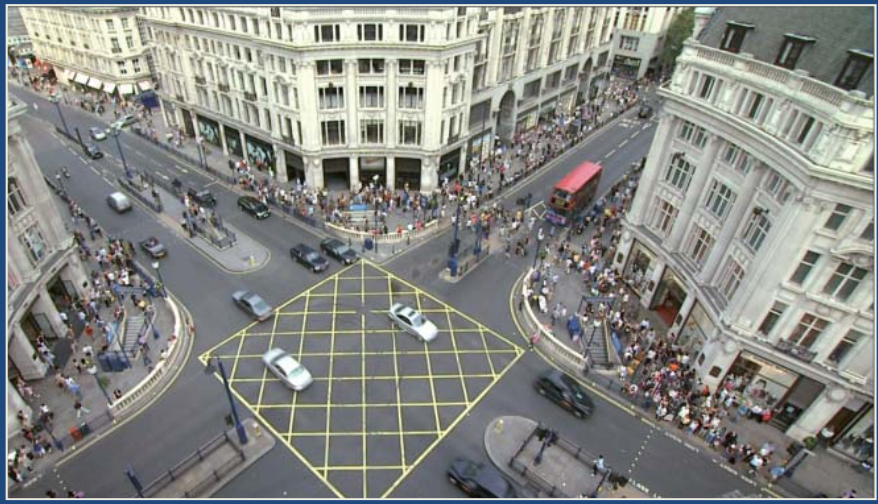
Reference Documents

Oxford Circus Monitoring Reports

- Pedestrian 'Business Case Validation'
- Traffic Impact Assessment

Distribution

- **Oxford Circus Diagonal Crossing Project Working Group**
- **ORB Traffic Working Group**
- **Westminster City Council**
- **West One**
- **Atkins**
- **The Crown Estate (TCE)**
- **New West End Company (NVEC)**
- **Greater London Authority (GLA)**
- **Metropolitan Police Service (MPS)**
- **TfL**
 - London Underground
 - Directorate of Traffic Operations
 - Network Assurance
 - London Buses
 - Better Routes and Places Directorate
 - Public Carriage Office



Oxford Circus Diagonal Crossing

Lessons Learned Report. March 2010.

Executive Summary

This study captures and reports the lessons learned from some of the teams responsible for the delivery of Oxford Circus Diagonal Crossing scheme which was launched, 2nd November 2009. The sole aim was to focus on the effectiveness of the strategies, processes and organisations to facilitate delivery.

A lessons learned workshop was held 1st December 2009 and included various representatives from TfL, Westminster City Council, The Crown Estate, Atkins and West One. A further workshop was held 27th January 2010 to capture the strategic lessons learned from the Traffic Working Group.

The study provides a summary of 'what went well' and 'what could have gone better'. Over seventy lessons learned were identified and were categorised at the workshop. Some of the key lessons identified under each category were:

- **Programme/ Project Plan**
- **Finance**
- **Design and Modelling**
- **Public Consultation**
- **Stakeholder Engagement**
- **Launch and Communications**
- **Construction**

Overall the delivery of the Oxford Circus Diagonal Crossing scheme was considered to be very successful by the sampled delivery team. The project faced many challenges including bringing the delivery date forward by 3 months to maximise its positive effect on the Christmas shopping period and the need to work across different public & private sector organisational structures to deliver this innovative design.

The scheme was a success because of the good spirit of partnership at every stage of the project and the professionalism shown by all parties involved. Additionally, DDA considerations were dealt with very well by WCC, by setting up an independent 'Inclusive Design Panel'. Their audit and comments led to good design solutions.

This lessons learned report will provide invaluable input into the formulation of future ORB projects and other urban realm schemes throughout London, and beyond.

Contents

Executive Summary.....	iv
1 Introduction.....	1
1.1 Background to Oxford Circus	1
1.2 Current Situation.....	1
1.3 Aims of Lessons Learned Activity.....	1
2 Lessons Learned Approach	2
2.1 General Approach.....	2
2.2 Stakeholder Segment Coverage	2
2.3 Lessons Learned Workshops.....	2
2.4 Lessons Learned Categories.....	3
2.5 Capture of Lessons Learned	3
3 Lessons Learned Results	4
3.1 Output	4
4 Conclusions	9
5 Next Steps	10

1 Introduction

This brief report documents the lessons learned from the delivery of the Oxford Circus Diagonal Crossing. The lessons should provide a useful contribution into future Oxford, Regent and Bond Street (ORB) projects and other urban realm improvement projects across London over the coming years.

1.1 Background to Oxford Circus

Oxford Street is a retail destination with over 200 million visitors each year. It forms part of London's Strategic Road Network, however, prior to the introduction of the diagonal crossing scheme; the footways were severely overcrowded due to high levels of shopping activities reducing their customer experience, in addition to significant delays along this busy public transport corridor. The carriageway and footways were also in poor condition and in need of upgrading.

The aim is to keep the West End as a destination of choice and therefore stakeholders agreed unanimously to the introduction of the innovative diagonal crossing and urban realm improvements.

1.2 Current Situation

Europe's busiest diagonal crossing was successfully launched 2 November 2009 after a combined investment by TfL and the Crown Estate of over £5 million. It addressed the following;

- Significantly reduced pedestrian congestion by repositioning of kerb lines and the widening of footways by up to 63%.
- Removed the stone balustrades and the crossings relocated to allow direct pedestrian routes, both straight ahead and diagonally.
- Traffic lights were re-phased so that vehicles from all four directions are stopped simultaneously for up to 30 seconds; allowing pedestrians to walk safely across the junction.
- Removed street clutter and other obstructions to pedestrian movement, to create even more usable footway space, 69% in total.
- Provided new southbound bus lane on Regent St north to protect bus reliability and journey times.

1.3 Aims of Lessons Learned Activity

The lessons learned activity aims to capture and document the key lessons learned from the Oxford Circus Diagonal Crossing Project Working Group and stakeholders from the Traffic Working Group (TWG). The sole aim was to focus on the effectiveness of the strategies, processes and organisations to facilitate delivery. There are currently two Monitoring Reports (Traffic and Pedestrians) in progress, to inform on the overall performance of the scheme.

2 Lessons Learned Approach

2.1 General Approach

Two workshops were held after the launch of the Oxford Circus Diagonal Crossing with two delivery groups. The sessions aimed to identify the effectiveness ('**what went well**' and '**could do better**') of the strategies, processes and organisations employed in the delivery of the prototype.

2.2 Stakeholder Segment Coverage

Key stakeholders were invited to the lessons learned exercise to understand the effectiveness of the project planning, development and delivery, however, not all were able to attend.

2.3 Lessons Learned Workshops

The following process was undertaken at both workshops.

- Attendees were asked to individually brainstorm '**what went well**' and '**could do better**' lessons against a list of categories (see category subsection). The attendees recorded these on sticky notes.
- The facilitator ran through each of the categories using a flip chart and generated a group discussion to capture feedback. All the individual lessons learnt sticky notes were placed under the relevant headings.
- The sticky notes and flip chart were collected from the sessions and written up.
- The collated output was subsequently verified with the workshop attendees.

2.3.1 Oxford Circus Lessons Learnt Workshop

The first workshop was held on 1th December 2009. The attendees at the meeting are shown in the table below.

Name	Role	Organisation
	ORB Programme Manager	Transport for London
	LUL Project Sponsor	Transport for London - LU
	LUL Oxford Circus Manager	Transport for London - LU
	Scheme Development Manager	Westminster City Council
	Construction Engineer	West One
	ORB Programme Assistant	Transport for London
	Senior Traffic Control Engineer	Transport for London
	Project Manager - Feasibility / Design	Atkins
	Project Manager - Feasibility / Design	Atkins
	Development Manager	The Crown Estate
	Principle Stakeholder Officer	Transport for London
	ORB Engineer	Transport for London

2.3.2 Oxford Street Traffic Working Group Meeting

The second discussion was held on 27th Jan 2009. These involved members of the Oxford, Regent, and Bond Street (ORB) Traffic Working Group, the attendees are shown in the table below.

Name	Role	Organisation
	City Commissioner of Transportation	Westminster City Council
	Head of Bus Priority Responsive Delivery Team	Transport for London
	ORB Programme Manager	Transport for London
	Service Development Manager	Westminster City Council
	ORB Programme Assistant	Transport for London
	Economic Development Manager	New West End Company
	ORB Project Manager	Westminster City Council

2.4 Lessons Learned Categories

The definition of each category is shown in the table below.

Category	Category Description
Programme/ Project Plan	The structure of the project – the process of delivering the scheme.
Finance	Financial matters.
Design and Modelling	Design and modelling of the Oxford Circus Diagonal Crossing.
Public Consultation	Formal and informal consultation with affected parties before the launch.
Stakeholder Engagement	The process of engaging all parties.
Launch and Comms	Launch and comms surrounding the delivery date.
Construction	Civil works of the scheme.

2.5 Capture of Lessons Learned

The sticky notes and flip chart were collected from the workshops and the lessons collated into a table. Each lesson has the following data entered against it:

- Reference number.
- Lesson Learned Category – See appropriate section for category definitions.
- Raised by – The name of the person who raised the lesson.
- What went well checkbox – this is checked if this item went well in the project.
- Could do better checkbox – this is checked if this item could have gone better in the project.
- Lessons Learned Description – the description of the lessons learned.

3 Lessons Learned Results

3.1 Output

The lessons learned from both workshops have been collated and grouped by category type. The full list is presented in the table below.

Unhighlighted – Lessons Learned from the Oxford Circus Diagonal Crossing meeting on Tuesday 1st December 2009

Highlighted - Lesson Learned from Traffic Working Group meeting on Wednesday 27th January 2010

Lesson Learned Category	Ref No.	Raised by	What went well	Could do better	Lessons Learned Description
Programme/ Project Plan	LL 1		✓		Project was delivered on the ground in just two years, from inception to completion – very impressive.
	LL 2			✓	Possible justification of scheme based solely on retail component – and the potential to bring in extra retailers through improved environment.
	LL 3		✓		Programme for delivery was brought forward by 3 months to achieve ideal launch date, minimise impact on local businesses and maximise exposure.
	LL 4			✓	Programme brought forward by 3 months did affect stakeholder lead time for procedures /processing. Ensure, for example, LU requirements (lead times) in applying for closure applications are included within the programme. (can take up to 90 days for approval)
	LL 5			✓	Programme brought forward limited the time spent on Detailed Design (DD). The meant that design quality was compromised. Design whilst under construction could lead to significant risk.
	LL 6		✓		Tight programme for detailed design. Atkins & West One had to work together rather than the normal inter-consultant working. Developed good partnership. Collaborative working instead.
	LL 7		✓		Change in personnel during construction was a major risk, but good handover reduced the impact.
	LL 8		✓		Many stakeholders were apprehensive about the project in the beginning – it was delivered on time and to budget.
	LL 9			✓	Ensure that the revised programme /stage plan is circulated on time; otherwise stakeholders lose confidence in any progress reporting.
	LL 10			✓	Accelerating the programme led to increased risks, increased cost which could have resulted in decreased value engineering.
	LL 11			✓	Stress caused by delay to WCC cabinet member response /approvals. Allocate at least 2 months for approval process, once cabinet report is submitted.
Finance	LL 12		✓		TCE agreed to meet the cost of project planning and development. This reduced the risk on TfL during the initiation stage. The overall cost was shared 50:50, between TfL & TCE following cabinet, SAB and NMG scheme approval.
	LL 13		✓		Good finance sources partnership.
	LL 14		✓		Keep emphasising multi modal benefits and the holistic approach to delivery. Stakeholders will eventually adjust if they are being unreasonable or over cautious.
	LL 15		✓		The launch of the scheme may have contributed to the impressive ORB area Christmas trading – this is, however, difficult to quantify.

Unhighlighted – Lessons Learned from the Oxford Circus Diagonal Crossing meeting on Tuesday 1st December 2009

Highlighted - Lesson Learned from Traffic Working Group meeting on Wednesday 27th January 2010

Lesson Learned Category	Ref No.	Raised by	What went well	Could do better	Lessons Learned Description
	16			✓	Lack of retailers investing in public realm. In future, a good idea could be to attract investment from local retailers, who have undoubtedly benefitted from the scheme.
	LL 18			✓	Financial governance had grey areas due to public / private working – agree reporting structure and payment mechanism from onset and ensure high level sign-off.
	LL 19			✓	Short programme led to work being more reactive than proactive, which increased costs.
	LL 20			✓	Limited due to supplier resource issue – consider need for independent cost tracker on schemes (taking Network Rail for example)
	LL 21			✓	Greater transparency needed in finance and reporting – actual cost /invoicing to date (the scheme is programmed for completion April 2010)
	LL 22			✓	More transparency needed from WCC on the resolution of issues raised during construction, and the impact on contingencies.
Design and Modelling	LL 23		✓		9 options identified. The preferred option was agreed quickly by all stakeholders. This was key to achieving an accelerated programme and delivery.
	LL 24		✓		DDA considerations were dealt with very well by WCC by setting up an independent– Inclusive Design Panel – their audit and comments led to good design solutions. This is a very important Lessons Learned.
	LL 25		✓		Unique design – thinking outside the box –and still complied with all design guidelines
	LL 26		✓		DTO UTC played a vital role in calibrating and validating the model. The project sponsor can help the process by populating the generic elements of the TSSR.
	LL 27		✓		The scheme is a good example of 'smoothing traffic'.
	LL 28		✓		Good working partnership between WCC /TfL to obtain necessary approvals (TSSR, NA, NMG)
	LL 29		✓		Signal Countdown was requested but deferred on grounds of safety and risk (didn't want to implement two new features; the diagonals and the countdown at the same time). Design can still accommodate countdown at a later stage.
	LL 30		✓		Many iterations of modelling required with quick changes to brief. Good Client leadership meant Atkins responded /turned things around well – improved working relationship with DTO.
	LL 31		✓		Good communication between LU and intelligent space (Atkins) to review passenger flows (extra modelling) around LU entrances. Cost increased, but great value for money.
	LL 32			✓	Railing structure introduced later in project – lead time/ approval process seriously impacted programme – ultimately brought on too late within project scope. Be aware of the true impact of scope creep.
	LL 33			✓	Benchmarks from Ordinance Surveys along Oxford St and down Regent St don't tie up at Oxford Circus. Could lead to issues with future schemes. Would be worth checking before commencement. Key Lessons Learned.

Unhighlighted – Lessons Learned from the Oxford Circus Diagonal Crossing meeting on Tuesday 1st December 2009

Highlighted - Lesson Learned from Traffic Working Group meeting on Wednesday 27th January 2010

Lesson Learned Category	Ref No.	Raised by	What went well	Could do better	Lessons Learned Description
	LL 34			✓	LBSLID not engaged early enough in the design of bus stop issues. Be aware that there are various sections within LBSL that need to be consulted.
	LL 35			✓	Old VISSIM model used – possible to save man hours/ money when there was serious political doubt of the project going ahead – in future consider building own VISSIM base model to fit the specific scheme from scratch. Key lessons learned.
	LL 36			✓	Anti-terrorist measures – bollards in front of station entrance stairs – disproportionate time spent on it. Who makes the decision on this to be identified – should have been resolved quicker.
	LL 37			✓	Post launch date – some drainage issues – more time perhaps could have been spent to iron out any potential problems at design stage.
Public Consultation	LL 38		✓		3 weeks Public Exhibition generated no material objection. Ensure that the venue is in a good location and a senior officer is in attendance at all times.
	LL 39		✓		Excellent media coverage. NWECC played an influential role in this, and assisting with stakeholder management.
	LL 40		✓		Animation visualisation – key product/ marketing tool in selling the good news of the project to all. A copy of the Diagonals animation is available upon request.
	LL 41		✓		Inclusive design Forum to address all DDA /modal issues – good idea and a must.
	LL 42			✓	Low turn out on consultations – possibly due to Summer Break and location – not many residents living in the area.
	LL 43			✓	Traffic order consultation was very late – caused problems with design. Best practise would have been to do this earlier.
	LL 44			✓	London Buses Infrastructure felt they were not engaged early enough. Ensure they are kept in the loop, from early stages of future projects where they have an interest.
Stakeholder Engagement	LL 45		✓		Very good stakeholder engagement from early stages of project and throughout project lifecycle.
	LL 46		✓		Regular progress meetings ensured all stakeholders' issues and action were addressed under one umbrella – this facilitated compliance, transparency and stakeholder confidence.
	LL 47		✓		"Right people, right time" – efficient /dedicated team came together to deliver the scheme.
	LL 48		✓		Proper project team established – formal /informal routes of comms maintained.
	LL 49		✓		Very strong Project Champions in Partnership (NR, PB, ML, LD, SL, NA, SS) WCC/TfL/NWECC/TCE.
	LL 50		✓		Good project co-ordination and response time – especially when considering engagement with LU on matters arising around flooding, and noise levels.
	LL 51			✓	Initially, Network Assurance was very apprehensive about the buildability of the scheme. However, NAT was very proactive and supportive, once the scheme was given design approval. In the future, adhoc updates would also help.

Unhighlighted – Lessons Learned from the Oxford Circus Diagonal Crossing meeting on Tuesday 1st December 2009

Highlighted - Lesson Learned from Traffic Working Group meeting on Wednesday 27th January 2010

Lesson Learned Category	Ref No.	Raised by	What went well	Could do better	Lessons Learned Description
	LL 52			✓	Issues to do with railing/roundel signs/bins painting could have been identified earlier. Again, this could be related back to the shorter programme shift.
	LL 53			✓	WCC relied on contractor to do comms. Such high profile schemes need more direction than standard. TfL had to take leading role to drive comms during construction. In future, WCC should identify an internal officer to lead on providing direction & setting standards for comms during construction.
	LL 54			✓	Budget must be provided for stakeholder engagement, and leader identified from day one. Remember: Project Manager's may not have the capacity and experience to deal with high profile nature of the project.
	LL 55		✓		Advertising hoardings were used around the site – very good idea. Worked well to inform passing pedestrians of what was happening – sold a positive story.
Launch and Comms	LL 56		✓		Excellent preparation and launch by WCC.
	LL 57			✓	Lack of Japanese clarity and inspiration at launch.
	LL 58		✓		Construction phase was a success due to superb work /commitment from WCC, DTO and West One.
	LL 59		✓		Brilliant cooperation /communication from IPD/LBSL/LU/MPS– Exemplified by C Phiniefs bringing together various stakeholders to meet LU approvals.
	LL 60		✓		WCC ensured that the Guest List was thorough – Always remember to acknowledge everyone who made a contribution.
	LL 61		✓		Launch completed in 10 minutes – minimising the impact on station/road traffic and bus services, whilst still providing an eye catching opening event.
	LL 62		✓		Between 01/09/09 and the 01/12/09, the Oxford Circus website, set up by WCC, was viewed 1,203 times. With a significant peak being observed around the launch date (2 nd November). The website is a very good comms tool.
	LL 63			✓	The Mayor opened the scheme and many comments came to TfL. Post scheme comms was not thought through – WCC could reply to or take ownership of post scheme comms. This should have been agreed before the launch date, in order to avoid this unnecessary headache.
	LL 64			✓	FAQ's was never finalised for website – it could help to reduce some hassle.
	LL 65			✓	WCC could have managed construction communications better, but were well supported by TfL Comms Team.
Construction	LL 66		✓		We kept busy Oxford Circus open at all times for trading, with good construction planning. Good cooperation was vital from Network Assurance Team, London Buses Network Operation and LU.
	LL 67			✓	Identification of wider LU stakeholder members earlier on would have been beneficial to the project (i.e. health and safety, operations).
	LL 68		✓		LU were understanding of surface issues (responsive to noise).

Unhighlighted – Lessons Learned from the Oxford Circus Diagonal Crossing meeting on Tuesday 1st December 2009

Highlighted - Lesson Learned from Traffic Working Group meeting on Wednesday 27th January 2010

Lesson Learned Category	Ref No.	Raised by	What went well	Could do better	Lessons Learned Description
	LL 69			✓	Two businesses encountered drainage issues from closed public toilet – contractors should have carried out a detailed risk assessment – would hopefully then have identified risk.
	LL 70			✓	Utility work is very complex in urban areas – long lead time needed to resolve issues.
	LL 71			✓	Hand Breaker excavation resulted in significant noise issues which affected LU operations in the station below – this risk was not identified and caused problems.
	LL 72			✓	Only 600m depth from carriageway level to underground station ceiling. Restricted to using handheld tools which led to programme delay and constraints – where possible, consider night working alternative. London Underground is very protective of their infrastructure.
	LL 73			✓	Shallow ducting pipes were laid due to the use of hand held breakers. The potential risk of early carriageway failure was minimised using 50mm steel plates.
	LL 74		✓		West One threw all resources to complete project on time – completed for ideal launch date.
	LL 75		✓		LU station flooded twice – all parties responsive to issue. Good co-ordination helped to minimise impact on local traders and service providers.
	LL 76		✓		Very good cooperation from London Buses Network Operations on TM requirements. Agreed changes helped put programme back on track, especially when considering the re-surfacing works.
	LL 77		✓		DTO Traffic Infrastructure provided excellent planning and coordination on signals works to help West One deliver on time. Provide adhoc update, it makes the difference.
	LL 77		✓		Use of clean team to clean surface in preparation for the launch, and on regular maintenance basis since the launch, to keep the area looking good.

4 Conclusions

The lessons learned exercise aimed to capture and document the key lessons learned from the Oxford Circus Diagonal Crossing Project Working Group and stakeholders from the Traffic Working Group (TWG). The sole aim was to focus on the effectiveness of the strategies, processes and organisations to facilitate delivery.

The project faced many challenges including bringing the delivery date forward by 3 months to maximise its positive effect on the Christmas shopping period and the need to work across different public & private sector organisational structures to deliver this innovative design.

A number of key lessons learned from delivery of the Oxford Circus Diagonal Crossing have been identified below:

- This major project was successful because it established an active steering group with the right level of representation from various stakeholders.
- The importance of conducting the risk workshop and quantified risk assessment should not be underestimated. This was absolutely critical in order to raise awareness to stakeholders on all the possible risks and issues that could have affected the delivery of the scheme. The risk workshop helped to inform the level of risks and contingencies required to make the project successful.
- The fact that there were several changes in key personnel during the project lifecycle meant that there could have been a significant impact on the programme delivery. However this was minimised due to early identification of changes and good handovers.
- Disability Discrimination Act (DDA) considerations were dealt with very well by WCC by setting up an independent 'Inclusive Design Panel'. Their audit and comments led to good all-encompassing design solutions.
- It's a simple fact but benchmarks from Ordinance Surveys along Oxford St and Regent St didn't tie up at Oxford Circus. This straightforward issue was a source of concern when considering levels and drainage. Therefore it would be worth checking these figures before the commencement of any future development in the area.
- The Crown Estate was very supportive in the development of the project. This serves as a good example of what can be achieved with public and private sector initiatives. Therefore, it would be good to see TfL and the local authorities seek out further opportunities to work with the private sector where possible.
- The scheme was only a success because of a good spirit of partnership at every stage of the project.

Ultimately, the lessons learned workshops gave us an excellent opportunity to capture the views of some of the stakeholders involved. This lessons learned report should provide invaluable input into the formulation of future ORB projects and other Urban Realm schemes throughout London and beyond.

5 Next Steps

The following next steps should be considered:

- Two monitoring reports are being commissioned; a **Traffic Assessment Report** currently being formulated by TfL, and a **Pedestrian 'Business Case Validation' Report** being prepared by intelligent space – Atkins. These reports, once completed, should provide a useful insight and help to give a better understanding of the actual output of the scheme, compared to the predicted.
- Additional steps should be made to commission and review the Stage 3 and 4 Road Safety Audits. These could in turn generate further lessons learned, which could be added to this report.
- We recommend this paper to the project board of the recently announced Piccadilly Circus scheme; who should use the example that the delivery team of the Oxford Circus Diagonal Crossing set, in order to deliver a high profile and successful project, on time and to budget.