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Traffic Advisory Leaflet 5/11

November 2011



Quality Audit

Introduction

This leaflet gives advice on the use of Quality Audit (QA) in the street design process as outlined in Manual for Streets¹, Manual for Streets 2 Wider Application of the Principles² and Local Transport Note 1/08 Traffic Management and Streetscape³. It is not intended that this document shall cover all legislative requirements or duties imposed upon a local authorities when delivering a public highway project. QA is a way of working that is flexible enough to be used in any highway infrastructure project as it is designed to assist clients, designers and service providers to deliver the initial aspirations of a project.

The key benefits of integrating QA into a project management system are that it:

- Delivers a transparent process that demonstrates that needs of all user groups have been considered both locally and strategically
- Puts check procedures in place to enable objectives to be delivered
- Contributes to cost efficiency in design and implementation
- Encourages engagement with stakeholders.

QA should be seen as being integral to the design process, from initial conceptual designs when the vision for a scheme is developed through to maintenance and monitoring. The process enables a multi disciplined team of built environment professionals to apply their expertise to contribute to the successful outcome of a project. It is recommended that local planning and highway authorities agree on and set down a process for implementing and documenting QA, including procedures for resolving any issues that are raised during the process.

What is Quality Audit?

QA is a defined process, independent of, but involving, the design team, that through planning, design, construction and management stages of a project, provides a check that high quality places are delivered and maintained by all relevant parties, for the benefit of all end users. QA is a process, applied to highway, traffic management or development schemes, which systematically reviews projects using a series of discrete but linked evaluations and ensures that the broad objectives of place, functionality, maintenance and safety are achieved. The starting point is to establish the vision and/or objectives for the scheme, which could be expected to address the following:

- Seeking an appropriate balance between Place and Movement
- Enabling accessibility for all user groups
- Recognising the context and presence of wider strategic modal routes and the impact the scheme may have
- Making sure that the quality of existing public realm is maintained or improved and that new places are of high quality
- Meeting community needs
- Road safety and personal security
- Specifying appropriate materials and layout in terms of appearance, durability and maintenance requirements

Benefits

There are certain key benefits of using a QA process as part of a highway, traffic management or development project.

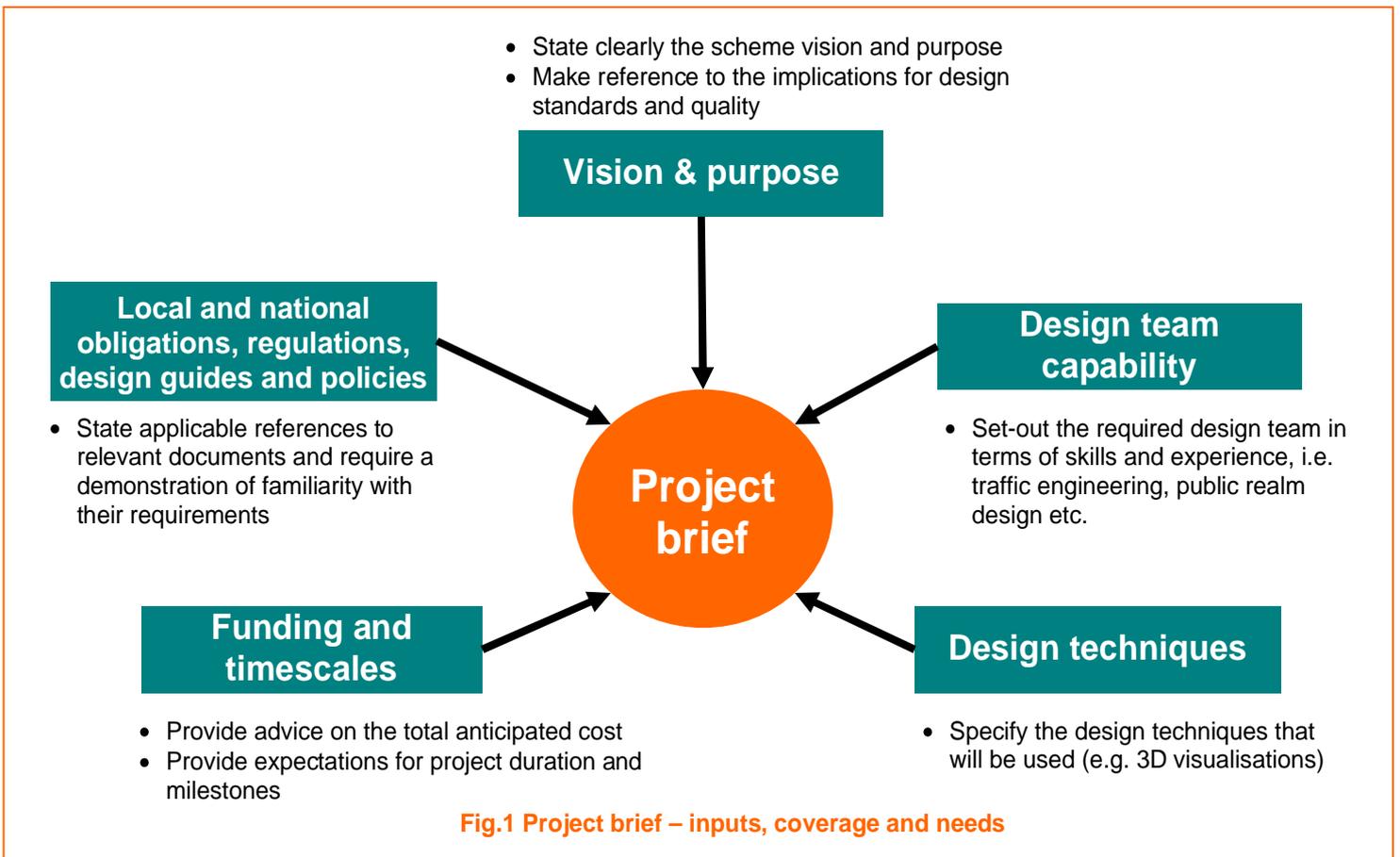
- It delivers a transparent process that demonstrates that needs of all user groups have been considered both locally and strategically and puts check procedures in place to ensure objectives are delivered.
- It documents the decision process. This is particularly important where innovative or previously untried ideas are proposed.
- It may identify cost savings in the design process and reduce the likelihood of problems after completion that could result in costly remedial works.
- It contributes to the consideration of quality of life issues at the design stage of proposed developments and assesses success through engagement with occupiers.
- It can be used to help users and occupiers to understand more about their new streets and places and how the proposed scheme would deliver behavioural and environmental changes.
- It ensures that as the project develops it is properly reviewed against the original vision and objectives.
- It helps to deliver on the climate change, sustainable transport and health agendas.
- It assists in understanding the long term maintenance costs that are associated with quality public realm.

Project Brief

The project brief (see Fig. 1) is possibly the most important document for any project as it sets down the expectation of the client in terms of the Vision, Purpose and Action. It must therefore be clear and concise with objectives clearly defined.

It is recommended that all project briefs for works in the (street based) public realm include objectives in relation to:

1. **Place** which could include:
 - Issues identified by the local community in relation to ease of use and attractiveness of streets e.g. need for seating, lighting, planting.
 - Achieving a balance between movement and place.
 - Public realm quality.
2. **Functional requirements** which could include:
 - Accessibility for all users, based on the premise that ease of use for pedestrians should generally come first.
 - Requirements for vehicular access, including any parking and servicing.
 - Lighting requirements and issues relating to personal security.
 - Suitability of materials for use within the scheme.
3. **Safety** which could include:
 - Objectives relating to known personal security as well as road safety issues.



- Objectives relating to a perceived safety issue for pedestrians/cyclists or public transport users.
4. **Maintenance** which could include:
- An assessment of the future costs of maintenance (of proposed materials and street furniture) to ensure that these costs can be met.
 - An assessment of the ease of access for street cleaning and general environmental maintenance based on local inspection and management regimes.

Application

QA is appropriate for both large and small schemes and for changes to existing streets that are proposed by the highway and/or planning authority. It is also appropriate to many schemes being brought forward by developers. The size, complexity, level of innovation and/or political sensitivity will influence the approach that local authorities take in applying the QA process to their schemes.

Process

QA is a process that should be used at all stages of a project. It is recommended that the Audit is led by a nominated QA co-ordinator with appropriate experience who would be responsible for producing the QA report. The QA co-ordinator is a key role in the process providing the link between the design team and the audit/assessment process and acting as arbitrator if conflicts arise either during the audit assessment stages, or when feeding conclusions and recommendations back into the design process. The QA co-ordinator should use the individual scheme audits/assessments (see below) as building blocks for the final report. A review meeting with team members responsible for the individual building blocks will help to arrive at a consensus, balancing the various findings and ensuring transparency in the QA report. The aim should be a QA report with a set of clear, agreed outcomes and recommendations that are fed back into the design process through discussion and agreement with the design team.

For some schemes a more inclusive approach may be required whereby all those with an interest in the project, including the general public and groups representing specific user groups such as disabled people, cyclists and walkers are brought together to identify and resolve competing objectives. This may require a staged process to ensure all views are considered.

For developer led schemes, QA should be a part of the development team approach by which all relevant disciplines contribute to the planning process.

Building Blocks

The QA building blocks comprise a number of discrete reviews undertaken by individuals with a specific skill set that enables them to arrive at a formative view which is reported to the group in the review meeting.

It is not intended that the individual assessments should always result in a series of formal written reports; this will depend on the scale and nature of an individual project or the view of a local authority on the approach it requires to documenting the QA process. It is sufficient that the individual assessments comprise a list of notes, annotated maps, observations, conclusions and recommendations that can be fed into the review meeting. However, the information from the individual reviews will need to be recorded and retained to ensure that an audit trail can be established for the decision making process.

The framework of reviews that can inform the QA process should be considered at the initial planning stage. The type and extent of reviews proposed will be tailored to meet the requirements of a particular project, but generally the QA process will include a mix of user and design reviews and may include all or some of the audits/reviews listed below:

User Review

- Street character review
- Road Safety Audit (RSA)
- Cycle Audit/Review
- Access Audit (including emergency services and deliveries)
- Parking Audit
- Walking Audit
- Non-Motorised User Audit (a specific requirement for Highways Agency schemes, and could be applied to other schemes, in whole or in part)
- Community Street Audit
- Equality impact assessment

Design Review

- Visual Quality Audit
- Functionality Audit
- Placecheck
- Materials Audit

Other issues that may need to be considered in the QA process include the impact on utilities, trees and planting, drainage, emergency services, maintenance (structural and environmental), crime and disorder etc.

The various user/design reviews should be brought together in a single QA report (an example of which is described below) in order to identify any conflicts that may arise, with a view to seeking a balanced response.

The design team should document the decisions affecting the various user groups, and review the project at the design and construction stages to assess how well objectives have been achieved.

Quality Audit Report

A QA report might contain:

- a. A clear statement of the vision and objectives for the project so that the recommendations from the various reviews/reports can be readily related to them.
- b. Basic scheme data such as existing accident patterns for a three year period, traffic flow data, current and predicted, information relating to pedestrian flows and desire lines, and levels of cycling.
- c. A statement on strategic routes for different modes that may be affected by the scheme proposals.
- d. A description of the project and a location plan. The location plan could be broken down into easily identifiable sections and could be used to identify the various issues raised in the individual reports e.g. by using colour coding for the various reports.
- e. General comments on the project and a summary of the conclusions and recommendations arising from the QA.
- f. The main body of the report would contain:
 - I. Chapters matching up to various sections of the location plan.
 - II. Each chapter could colour code the various issues raised by a particular type of assessment or audit.
 - III. Include an assessment of any conflict from the individual reports along with a recommendation for resolution of the issues.
 - IV. Small, simple projects may have only one chapter whereas larger complex projects could have many.
 - V. An annex containing the individual written audit/review reports that were carried out and details of any user group reviews or public consultation results that fed into the professional review meeting.

Stages in the Process

There are five key stages in the development of a scheme where the QA process may be appropriate; Project Initiation, Preliminary Design, Detailed Design, Implementation and Maintenance & Monitoring.

Project Initiation

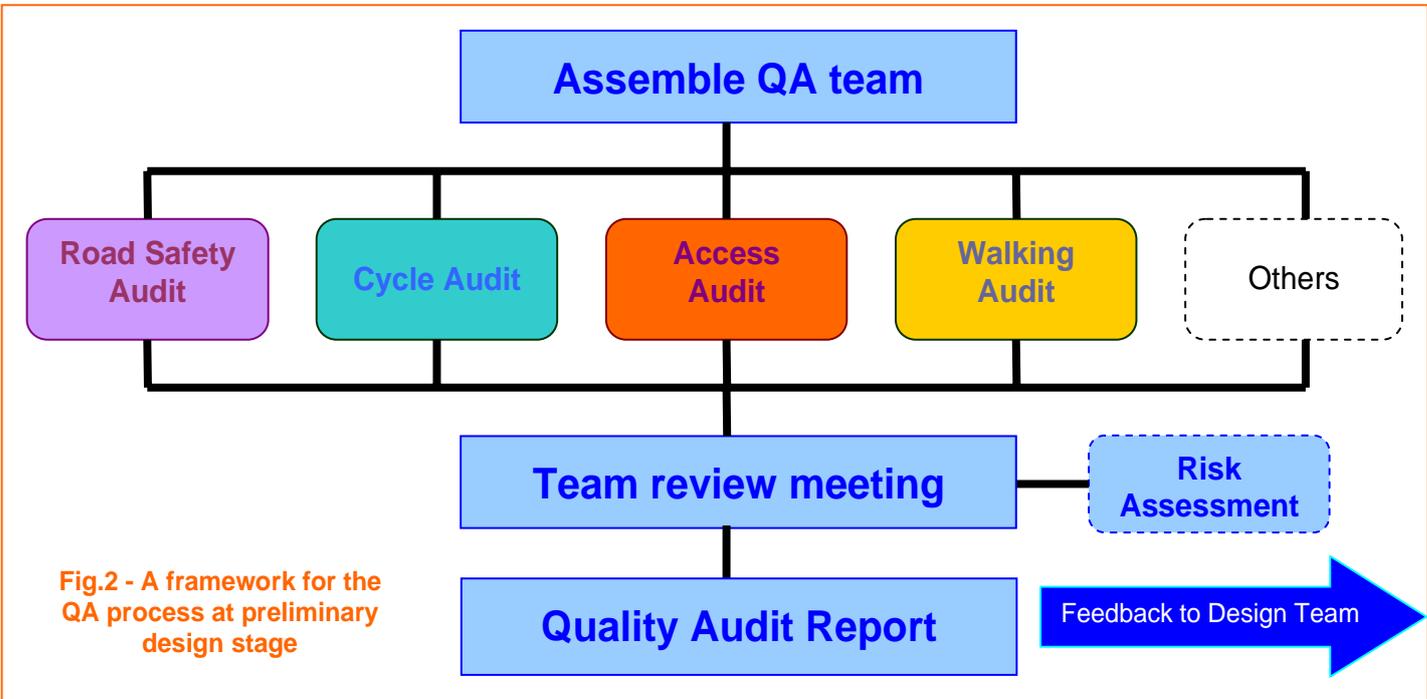
In this stage the Client sets the brief, which should include the vision and/or objectives of the scheme. Where this is a local authority led scheme this may be in consultation with local stakeholders. At this stage the QA process needs to be defined and agreed. For larger schemes, or where there are particular complex issues relating to a particular user group or place, it may be decided that individual written audits will be produced and used in the QA review meetings to support the review process. In this stage the range of audits/assessments that will be required to ensure the scheme objectives are achieved should be decided. For example some local authorities have decided that certain types of scheme do not require full RSAs to be undertaken preferring road safety assessments or road safety checks, see Road Safety Audit Guidelines⁴.

Consideration should also be given to how the scheme objectives support or constrain any strategic planning for movement of different modes e.g. bus, cycle and pedestrians.

Preliminary Design Stage

In this stage the audit team undertakes the various audit/assessments. If any safety issues are raised as a result of conflicts between two or more of the audits, the team may need to undertake a risk assessment as part of the review meeting which would then be incorporated into the QA report. The QA co-ordinator should feedback the recommendations of the report to the design team.

Figure 2 describes a generic framework for the QA process. Additional/different assessments would be carried out depending on the scope of the project and local requirements established at the project initiation stage.



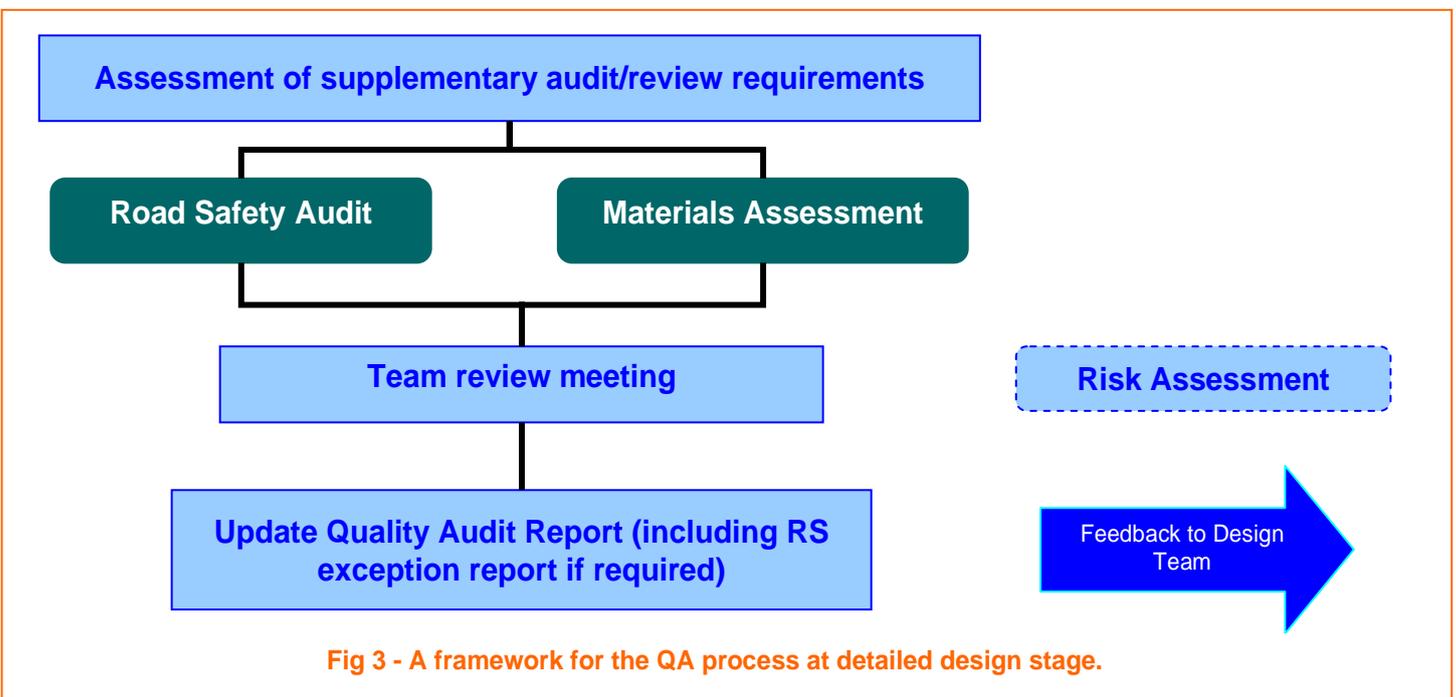
Detailed Design Stage

In this stage (see Fig. 3) the scheme is appraised against the QA recommendations to confirm that the scheme objectives are being achieved. It is essential to consider if supplementary audits or assessments are required on issues that were not apparent at the earlier stages, for example an audit of materials proposed or a stage 2 Road Safety Audit (RSA). Any supplementary assessments/audits should be incorporated into the QA report and recommendations re-assessed. If further conflicts or issues between the various audits/assessments are identified that impinge on safety then further risk assessment may be required as part of the review meeting process.

The QA Co-ordinator should feedback any changes to the QA report to the design team.

Implementation

As the construction stage nears completion a further check against the QA report to ensure the recommendations have been taken on-board and the scheme objectives delivered. Consideration of the findings of the post completion RSA (stage 3 audit) will also need to be taken into account. During construction if any changes are introduced they need to be reviewed against the QA report to ensure that scheme objectives are not compromised. In the case of development schemes, the planning authority may need to agree to any such changes.



Maintenance and Monitoring

After an appropriate period of time (e.g. six to twelve months) it is recommended that a review (including consultation with users) of the project is undertaken to establish if the original scheme objectives and any expected changes in road user behaviour have been achieved. This may include the conclusions of a stage 4 RSA if applicable. In respect of development schemes, post-occupation surveys could be used to understand the views of those who have the greatest interest in the outcomes.

It is recommended that this iterative process is incorporated into the highway authority's general project management processes.

References

1. *Manual for Streets*. Thomas Telford (DfT, CLG, Welsh Assembly Government 2007);
2. *Manual for Streets 2 Wider Application of the Principles*. CIHT (2010);
3. *Local Transport Note 1/08 Traffic Management and Streetscape*. TSO (DfT 2008);
4. *Road Safety Audit*. CIHT (2008).

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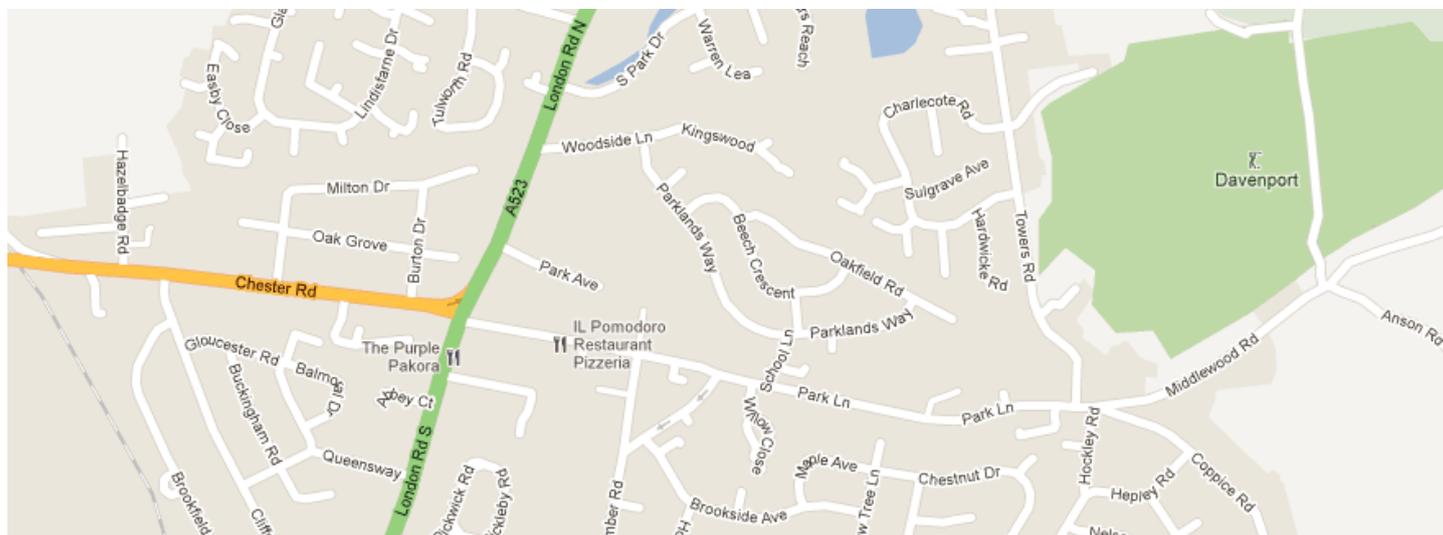
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Case Study example

Fountain Place, Poynton – Public Realm Improvements

Poynton is a small town in Cheshire, some 8km south-east of Stockport. Two major routes pass through Poynton, the north-south A523 London Road (around 15500 veh/day) and the east-west A5143 Chester Road (around 10500 veh/day). These routes join at Fountain Place in the centre of the town, which was laid out as a large traffic signal junction prior to the public realm scheme. Park Lane, the main shopping street in Poynton, leads east from Fountain Place.



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Cheshire East Council commissioned consultants Hamilton-Baillie Associates, Arup, Planit and Crowd Dynamics to design a regeneration scheme for the town centre. Phase 1 of the scheme, completed in March 2011, comprised extensive repaving works to Park Lane, removing signalised crossings and introducing courtesy crossings; lowering kerbs and giving additional space to pedestrians. The principles of shared space underpinned the complete scheme from the outset, with a design speed of 20 mph.



Park Lane – Before and After Photos

Phase 2 involves the redesign of the Fountain Place junction, removing the traffic signals and repaving the staggered crossroads in a square with a figure of eight arrangement, with no marked priority between traffic streams and with informal pedestrian crossings.



Fountain Place – Before Photo and Design of Proposed Scheme

Cheshire East Council required a Safety Audit of Phase 2, the Fountain Place scheme, but considered that the innovative and complex nature of the design meant that a more broadly-based Quality Audit was needed. TMS Consultancy and Phil Jones Associates were commissioned to carry out the audit.

The chosen process involved 5 separate audits, each of which was carried out by a different member of the team. A Quality Audit team leader was also appointed to oversee the audit. All team members carried out a site visit, and plans showing the proposed design and finished materials/planting were considered.

Audit	Description
Road Safety Assessment	Based on the CIHT Road Safety Audit Guidelines (2009). Identified potential safety problems, including a risk assessment, and possible actions to reduce risk.
Non-Motorised User Audit	Based on the recommendations of HD 42/05. Considered the existing and potential patterns of use by non-motorised users and identified measures that would improve their amenity and safety.
Accessibility Audit	Based on the IHT Guidelines 'Reducing Mobility Handicaps' (1991). Considered whether disabled people would have difficulties in using the scheme and recommended improvements.
Functionality Audit	Considered how pedestrians, public transport users, cyclists, buses, service vehicles and general traffic would use the scheme. Traffic capacity was also considered. Possible modifications were identified to deal with identified problems.
Visual Quality Audit	Reviewed the appearance of the new public realm, with particular focus on the streetscape elements and how their design may affect user behaviour, and recommended possible improvements.

These reports were circulated between the team members, who met to review the findings from the individual audits, with the meeting being chaired by the Quality Audit team leader. Whilst there was some overlap between the various audits this was considered helpful. It was notable that there was much consistency between the reports, and it was not difficult to agree an overall set of conclusions.

A summary report was prepared by the Quality Audit team leader, which set out what were considered to be the most important issues together with recommendations for mitigating them. Particular attention was given to the traffic capacity of the proposed junction and how any delays could affect driver behaviour towards pedestrians.

The report was considered by Cheshire East and a list of actions and changes to the design were developed. At the time of writing, Phase 2 of the scheme was being implemented.