SHEEN LANE, MORTLAKE

Improving safety for children and other vulnerable road users, and enhancing the quality of the public realm in Sheen Lane.

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Introduction

The need for transport in urban areas has always placed pressure on the quality and safety of the public realm. Railways and strategic roads can divide communities and create major barriers for local journeys and the movement of pedestrians. Over the past century, strategic transport requirements have tended to adversely affect the immediate surroundings of such infrastructure. Opportunities for safe, direct and comfortable movement for those on foot or bicycle, and especially for vulnerable pedestrians such as children, have tended to be eroded over time by the increasing pressure for mechanised transport.

Sheen Lane in Mortlake presents a prime example of the such problems. The north-south street, connecting Mortlake High Street and the southern bank of the Thames with the South Circular in Richmond, is bisected by the busy Waterloo - Richmond rail line. An at-grade level-crossing controls the intersection, resulting in around 47 minutes of barrier closure each hour.

The resulting disruption to pedestrian and vehicular movement on Sheen Lane generates significant problems for Sheen Lane as a whole, and in particular for the businesses and facilities close to the crossing. The build-up of long queues of traffic combined with large numbers of pedestrians creates a dangerous and uncomfortable environment for the area as a whole.

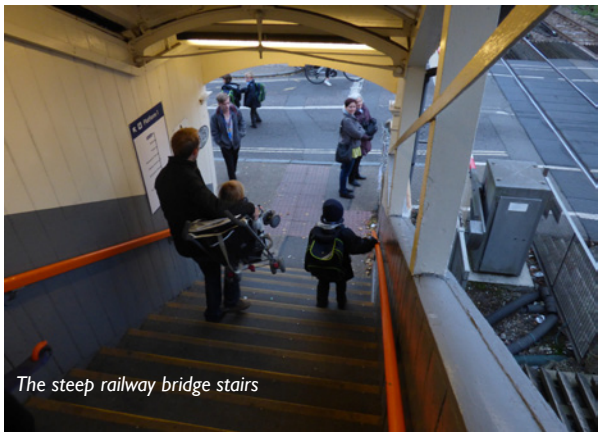
This brief report was commissioned by Thomson House School, whose main buidling lies close to the level crossing on Sheen Lane. The current arrangement generates understandable concerns for children attending the school, their parents and guardians, and for school staff. Sheen Lane's circumstances are also of concern to the wider community in Mortlake, including traders on Sheen Lane, to the promoters of a major new development nearby, and to the London Borough of Richmond as the relevant highway authority.

The current problem

The existing buildings and environment around Mortlake Station precludes the construction of a bridge or underpass to overcome the difficulties evident around the crossing. Although the Station bridge provides an alternative route via steep stairs, it is unsuitable for less agile pedestrians, and especially for families with small children and pushchairs. Large numbers of pedestrians and cycles congregate at the crossing barriers in very limited space, especially during peak hours. The surge of traffic as the barriers lift creates an awkward and risky environment for those crossing on foot or by bike, with limited and ill-defined footway space alongside heavy traffic. The crossing is not only critical for Thomson House School (with facilities either side of the crossing). It is also well used by pupils and parents of nearby St Mary Magdelen School. A proposed new school as part of the development of the former Brewery is likely to increase pedestrian volumes.

The barrier also generates significant local congestion, with peak hour traffic frequently backing up onto Mortlake High Street, and along the southern retail length of Sheen Lane. This impacts east-west flows along Mortlake High Street and Lower Richmond Road, and erodes the quality of the surrounding public realm, such as Mortlake Green and the former brewery site to the north.

Of more concern is the effect of the delays caused by the level crossing on driver behaviour, and especially speeds. The lengthy queues of vehicles can generate frustration and impatience, so that drivers are less tolerant of the large numbers of pedestrians and cyclists gathering at the crossing. At less busy times, drivers approaching the crossing are inclined to increase speed to minimise the chance of the barriers coming down. More aggressive driving increases the risk to other road users, and makes Sheen Lane a less forgiving highway environment. This is particularly problematic given the presence of a pub, the station forecourt and the variety of shops and cafés to the south of the crossing, and the school, community park and residential properties to the north.



The steep railway bridge stairs

The Sheen Lane context

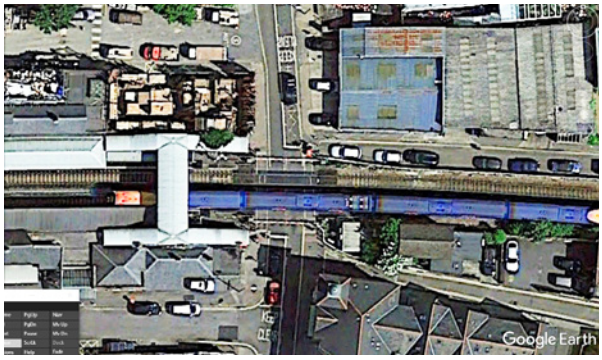
In common with most streets, Sheen Lane serves a number of purposes,. The principal ones are, firstly, as an integral part of the town centre of Sheen and Upper Richmond Road, and secondly as a key north-south link between the south bank of the Thames and the South Circular (the B351). This link provides one of only three local vehicular connections across the Waterloo-Richmond railway line, the others being the South Circular to the west, and White Hart Lane to the east. There is also a pedestrian footbridge 250 metres to the east of Sheen Lane between North and South Worple Way.

Mortlake Railway Station and the adjacent level crossing are the key focus for pedestrian traffic, together with Thomson House School. The retail street south of the railway includes a bank, pub, several cafe's and independent shops, as well as Richmond Borough Council's Sheen Lane Centre. Thomson House School, a car showroom, wood yard and Post Office sorting office front the northern section of Sheen Lane. Mortlake Green borders the north-west length, opposite a few terraced properties.

The railway line handles around 300 trains per day, and the barriers are closed for up to 47 minutes in each hour. At peak hours around 100 pedestrians and 10-20 cyclists gather at the closed barriers. The surge of movement on opening creates significant pedestrian congestion, bringing those on foot close to accelerating vehicles.

Thomson House School for primary-aged pupils is divided between two sites either side of the railway, presenting particular logistical problems. However the unsafe and uncomfortable environment for pedestrians has wider implications for economic and civic activity in Mortlake, and would appear to be limiting the value and potential contribution of the street.

The northern end of Sheen Lane terminates in a wide mini-roundabout which connects the dual carriageway of Mortlake High Street with the narrower, more sinuous Lower Richmond Road. The junction forms an important node for the potential redevelopment of the former Brewery site between Sheen lane and the River Thames.



The entry to Sheen Lane from the South Circular

Sheen Lane entry from the North

Sheen Lane context

Assessing the risks

Network Rail and the Rail Industry have well-established guidelines for assessing risk at level crossings. The Office of Rail and Road provides guidance and mechanisms for assessing risk, and draws attention to the need for "innovative solutions" where grade separation is not an option. There is a recognition of the need to re-assess arrangements every 2-4 years, to take account of changing circumstances, especially where traffic volumes are increasing.

Fortunately the accident history for the site is not severe. However, this is merely one factor to be considered when assessing risk in such circumstances. It is likely that the risk is most critical to the most vulnerable road users, especially the risk for children and to cyclists. The proximity of moving traffic to busy and relatively narrow footways, the bunching of pedestrians as a result of the interruptions to traffic flows, and the likely speed and responses of drivers to the circumstances are the key factors for consideration, over and above the well-established risks associated with level crossings.

In assessing the risks associated with a set of circumstances such as Sheen Lane and the School, a number of inter-related factors need to be taken into account, and their relative relevance considered. These will include:

- the numbers of pedestrians and cyclists
- the proportion of especially vulnerable pedestrians, such as young children and people with disabilities
- the volume of traffic flows
- the mix of traffic and proportion of HGV's
- the speed of traffic and driver behaviour
- the proximity of the steep railway bridge staircases to the carriageway
- the narrowness of footways in proportion to peak-hour pedestrian flows

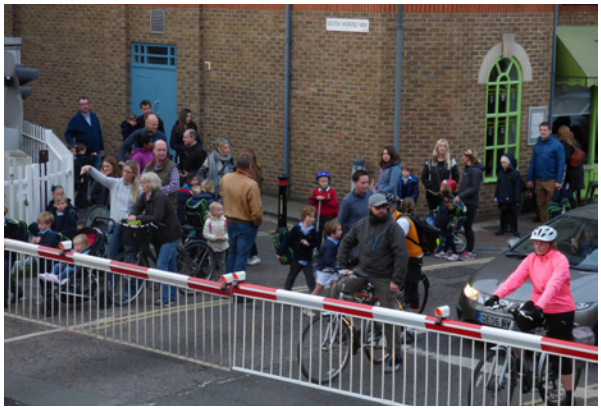
Reducing the danger and discomfort

It is unlikely that any major new road or rail infrastructure will be forthcoming in anything but the long term for Sheen Lane. The challenge facing all those with an interest in Sheen Lane and its surrounding area is to explore the various measures that can be carried out in the near future that may help alleviate the major concerns and reduce risks. It is important to stress that the inherent difficulties associated with pedestrian movement and civic activity having to co-exist with vehicular traffic are unlikely to disappear; there will continue to be significant risks associated with a trafficked street and with unstaffed level crossing. The goal of any interventions will be to reduce the risk and ameliorate the other negative effects.

Our experience and research suggests that additional legal or conventional highway interventions, such as signs, signals, barriers or road markings are not likely to be effective in reducing the risk. On the contrary, further signing and suchlike will merely increase the clutter of the streetscape and reduce the engagement of drivers with the human context of their surroundings. Measures such as lower speed limits or weight limits will be limited in effect and all but impossible to enforce.

We would also be sceptical of further emphasis on changing the habits and expectations of children and other pedestrians. The presence (and unpredictability) of people, especially around schools, can be an important factor in moderating driver behaviour. The less children rely on adult supervision and constraints, the more they are likely to learn to be able to respond to the realities of traffic as they grow. The perception of risk, and the need to make constant judgements and calculations, is an essential part of the broader safety of children as they grow and develop.

Instead our recommendations focus on changing the expectations and behaviour of drivers in relation to Sheen Lane as a whole, and the area around the level crossing in particular. This will require a range of relatively small-scale adaptions to the form of the street, together with some minor overall changes. These are outlined below. Together they will transform the relationship between traffic and other activity in the street, and significantly reduce the risk and discomfort



Transforming Sheen Lane

If Sheen Lane is to be adapted to better serve the needs of the neighbourhood of Mortlake, the traders and businesses fronting the street, and the many pedestrians, cyclists and others moving through and around the area, then a coherent strategy is required. Such a strategy can guide investment in both the short and longer terms. We would recommend that this include a number of minor changes to the form of the street and carriageways along its length, combined with several linked modifications to achieve a consistent set of messages for drivers and other street users.

If such a strategy is to be effective, it is important that a consistent approach is applied to as wide an area as possible. At the same time the strategy has to take account of the resources, and especially investment funding, that are likely to be available. The strategy needs to take account of the continuing constraints on public sector investment, whilst taking advantage of possible development opportunities.

Our approach is based on a comprehensive approach to Sheen Lane as a whole, giving particular emphasis to a number of critically important locations along its length. Central to the proposals are changes to the immediate area around the level crossing. In addition we propose changes to T-junctions to the south of the railway, in addition to measures aimed at highlighting the location of key landmarks, reference points and destinations along the street. We also recommend important changes to the entry ponts into the street from both the north and south. The former entry point could be effectively combined with measures to improve the context and frontage of future development of the Brewery Site, and especially key buildings on the intersection of Mortlake High Street and Sheen Lane, as well as around any future school on Lower Richmond Road.

The diagram below summarises the approach. Some initial indicative design approaches are illustrated on subsequent pages.

Sheen Lane Strategy

- Lower Richmond Road to be modified as part of any proposed development
- Reduce eastbound widths and improve central median on Mortlake High Street
- Create distinctive place and entry point at existing mini-roundabout junction
- Strengthen connection between street and a stronger park entrance
- Thomson House School. Create legible street frontage and "apron"
- Level crossing. Break carriageway continuity and create pedestrian space
- Create simple place at junction with Vernon Road
- Place-making at junction with Milton Road
- Create space as frontage to Pig & Whistle
- Modify entrance to Sheen Lane from South Circular to downplay highway role

Southern entry point

At present the southern entrance into Sheen Lane from the large junction with the South Circular gives little indication of the restricted nature of the street. The carriageway widths, road markings and signals combine to indicate a standard suburban London street designed for around 30 mph. Parking and on-street waiting spaces are not differentiated from the carriageway, giving the impression that the traffic area is wider than in reality. The mouth of the street creates an awkward and uncomfortable crossing for pedestrians, and the green traffic signal raises driver confidence and encourages speed.

Our initial sketch proposals would involve continuing the footway across the junction, requiring traffic to cross over this slightly raised area of paving. This arm of the signals could be removed. The first section of pavement can be made wider, reducing the carriageway to 6.1 m (large enough for the largest vehicles on the roads).

The perception of a narrower street is maintained by defining the areas for on-street paving in a contrasting paving tone and colour to the central carriageway. The centre line should be removed, or not replaced. The wider footway outside the Pig & Whistle pub could allow more active street life at this southern end of the street, and serve as the first of a series of "punctuation marks" along Sheen Lane.

Milton Road / St. Leonard's Road junction

All of the proposals for Sheen Lane combine to create, and respond to, a design speed (or intended speed) of close to 18-21 mph.. This lower speed context depends, in part, on a sequence of places that interrupt the linearity of the carriageway. This has the effect of reducing the focus for drivers on the level crossing, and emphasising the wider context of the street and its surroundings. The lower speed in turn permits a more informal arrangement for intersections that plays down formal priority and fosters informal negotiations driver to driver, and between drivers and pedestrians.

The staggered junction of Sheen Lane with Milton Road and St. Leonard's Road provides one such opportunity to break the linearity of the approach to the level crossing, and to reinforce the slow-speed context. The relative scale of the side streets communicates the informal priorities sufficently clearly, and the simple negotiations it fosters will help drivers entering Sheen Lane. The arrangement will help pedestrians crossing both Sheen Lane and the side streets through lower speeds and reduced crossing distances. A number of alternative paving layouts and types could be employed.

Vernon Road junction

The connections between the northern end of Sheen Lane and Vernon Road is especially important for children and staff at Thomson School to facilitate access between the two school sites. It therefore makes sense to provide an additional break in Sheen Road at the Vernon Street intersection. The wider footways and narrower carriageways promote slower approach speeds, and contribute towards a more pedestrian-friendly environment.

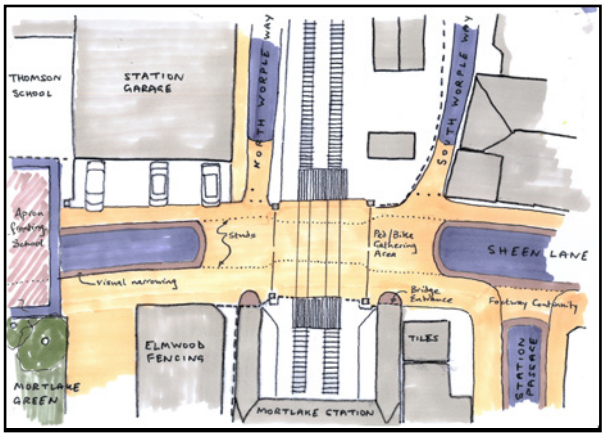
In the same way that the Milton Road junction could be handled in a number of ways depending on detailed design, budget and local preferences, there are a number of alternative approaches. The important principle is to give emphasis to the 'place' qualities of this location on Sheen Lane, and to highlight the presence and significance of Vernon Road.

We have illustrated a potential notional 'roundel' at the intersection. This may consist of nothing more than a slight variation in tone or texture, and has no formal significance (in contrast to a mini-roundabout). Nevertheless it is a helpful way to rebalance priorities, and to introduce a helpful element of uncertainty and ambiguity for drivers approaching from each direction.

Sheen Lane level crossing

The configuration of the streetspace surrounding Mortlake Station and the level crossing is clearly the most critical area to be tackled if the risk to pedestrians and cyclists crossing the railway line is to be addressed. The current arrangement take little account of the need for waiting and gathering space at the barriers, encouraging cars to surge forward when these are raised and the concentration of people on foot and bikes is highest.

It is especially important that the approaching carriageways are seen to end well short of the crossing. The whole area surrounding the crossing, including the mouths of both side streets and the approach to Mortlake Green, could be treated to create a visually coherent space, across which drivers negotiate passage according to the circumstances. The road markings defining the pedestrian space and footways could be defined by reflective studs. We would recommend careful treatment of the footway at the base of the railway footbridge to highlight the stairs. The dimensions of the asphalt carriageway should be sized to the mimimum necessary for slow-moving vehicles.



Thomson School frontage

The presence of the school represents both a challenge and an opportunity for any strategy to enhance the safety of Sheen Lane. The existing arrangement allows the linear carriageway to continue unbroken past the school front, generating uncomfortably high speeds when the street is not congested. Observations suggest that many parents and carers cross Sheen lane at this point - the zebra crossing is poorly positioned for pedestrians moving north.

Although appearing counter-intuitive, we would seek to extend the perceptions and presence of the school itself beyond its boundaries, to create a notional 'apron' to highlight the school. A strongly defined edge treatment maintains pedestrian awareness of the footway and carriageway, whilst generating sufficient awareness amongst drivers of the school and its surroundings. It is important that the paving or surface treatment allows for a consistency between the tone and texture of the footway and the apron.

Recognizable signs of childrens' paraphenalia, such as scooters, play equipement, chalk markings and temporary displays, will all help identify the space.

Mortlake Park

Similar to the approach towards the level crossing from the south, it is important that the straight linear carriageway be animated and interrupted by a sequence of incidents. Thomson School provides one such place. The entrance to Mortlake Park is currently somewhat difficult to identify, and has an uncomfortable relationship with Sheen Lane.

We would recommend simplifying the entrance space to the Park, and allowing its presence to spill across part of the carriageway. It is vitally important that the approaching carriageways are minimised in width. Additional strips of contrasting tone parallel to the kerbs can further reduce the visual width to maintain appropriately low speeds.

The edge strips help to reduce the pressure on cyclists in a street that lacks sufficient space for formally defined cycle lanes.

In combination with the apron outside the school, the two 'incidents' would create a very different environment to other surrounding streets, highlighting the special circumstances of the level crossing and the other street activities. In turn, the more pedestrian activity generated by the changes, such as more groups gathering at the entrance to the Park, the more effective the measures will become. This measure is also likely to add quality to the Park itself, in turn attracting more visitors and enhancing the neighbourhood.

The southern entrance

The junction between Mortlake High Street, Lower Richmond Road and Sheen Lane is also critically important to improving the safety and comfort of the rest of Sheen Lane. The point of entrance represents a critical transition between the busy east-west route along the Thames, and the low speed context of Sheen Lane. In addition the bend and junction has the potential to serve as a focal point for the potential redevelopment of the Brewery site, highlighting the presence of any new residential, educational or hotel use.

Our sketch illustrates a means by which the junction could become a termination of Mortlake High Street, slowing the traffic entering Lower Richmond Road as well as Sheen Lane. The space would not inhibite or significantly restrict traffic movement along the east-west axis, but would change the awareness, expectations and behaviour of drivers passing through this area. The small space, acting as an informal lobby, improves the relationship with the Park, as well as with the historic building on the corner.

Additional complementary measures on Lower Richmond Road could be taken to reduce the sweeping nature of the bend into the junction as well as reducing the excessive widths.

The fast sweeping approch along Lower Richmond Road

Costs and phasing

The approach outlined and illustrated above represents a longer term strategy for Sheen Lane and its surroundings. It is unlikely that such measures will be implemented simultaneously. They are likely to be introduced over a long period, particularly as further development in the area takes place. Whilst each of the measures will contribute to the necessary change in driver behaviour and speeds, it is the combination of steps which will ultimately achieve the fundamental shift in the perceptions of Sheen Lane.

Streets are expensive. The highways have to withstand huge impact from continuous traffic, in all weathers and temperatures, as well as providing corridors for drains and services, space for trading and economic activity, access to buildings and special events. Any changes to streets are disruptive, noisy and uncomfortable. Costs can vary hugely depending on a variety of factors that will need to be explored at later stages. Such factors include:

- the ground conditions and quality of the sub-base of the carriageway
- the presence and depth of drains and services
- the quality and longevity of materials selected
- the operational restrictions (whether streets can be closed during construction work)
- the method of procurement
- the extent of re-paving, lighting, and other potential changes

It is likely that, in common with many current schemes, funding will be assembled from a variety of sources, both private and public. Over coming years it is likely that significant amounts of maintenance monies will be spent in Sheen Lane, and it is essential that, should this broad strategy be adopted, such works can be informed, and contribute to, the overall aims.

Phasing may be determined by nearby developments, but the measures affecting the level crossing itself should be prioritised, along with changes to the north and south entry points.

Precedents

There are now sufficient examples of similar approaches to enhance the relationship between traffic and pedestrians, and to restore the economic value of high streets around the UK. Examples vary from busy London examples such as Wandsworth Road and Campden High Street, to city centre shopping streets such as Preston in Lancashire. More modest examples are emerging for secondary shopping areas and local centres, where slower traffic combines with street designs that emphasize a sense of place. Stonehouse in Gloucestershire, High Kingsdown in Bristol and Poynton in Cheshire serve as precedents.

Examples of a comprehensive approach to pedestrian safety around level crossings are less common. However the suggested approach adopts elements that have been successfully employed where major crossings or pedestrian activity is generated by the immediate surroundings. The visual integration of a primary school with an adjacent street can be seen in a number of mainland European examples, notably in the town of Noordlaren in the north of The Netherlands.

When reviewing any proposals, a number of careful assessments will be necessary to assess and clarify the likely outcomes of any changes. It is essential, for initiatives such as this, that a comprehensive 'Quality Audit' be undertaken, to allow all the potential benefits and risks to be assessed. This accords with the recommendations of *Manual for Streets 2*, and provides a more holistic review of the implications of the overall scheme than a conventional 'Safety Audit'.

We would recommend that a number of existing and proposed precedent examples should be visited and studied as part of the overall assessment of any scheme. It is essential that as wide a consensus be established amongst a broad range of interested parties, such as residents, traders, developers, school staff and parents, the railway authorities, as well as the Borough Council members and officers.

Proposals for High Kingsdown, Bristol

Informal crossings Brittany

Petersfield High Street

Noordlaren Primary School, The Netherlands

Conclusion and next stages

Sheen Lane presents an unusual challenge for an urban street. Multiple activities and facilities have to co-exist with significant volumes of local traffic. The presence of the Station and its level crossing on such a busy line create a very particular set of problems. A major redevelopment is likely to take place nearby in the coming years.

This brief initial study is intended to open a debate about the way in which the immediate concerns might be addressed. It illustrates a potential strategy that goes beyond the immediate surroundings of the school and level crossings, and seeks to fundamentally change the pedestrian and driver environment of Sheen Lane. In our view, only such a broad approach to the street will achieve such a change. it is a strategy that will require very clear leadership and consistent support from the local community over a number of years. But the long-term benefits for Sheen Lane in particular, and for the Borough of Richmond as a whole, will be very significant. The changes will add significantly to the value and attractiveness of the area. Most importantly, the approach provides a means to substantially reduce a wide-range of risks to pedestrians, cyclists and drivers, without major changes to the integrity and usefulness of the street network.