

On the instructions of States of Jersey Police

Collision on 27<sup>th</sup> June 2016

at

Tunnell Street, St Helier

HIGHWAY REPORT

Prepared by A.E.A Luck

A Luck Associates

13<sup>th</sup> October 2016

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## 1 INTRODUCTION

### 1.1 The writer

I am Alexandra Elizabeth Anne Luck, the Principal of A Luck Associates, Caudle Green, Cheltenham, GL53 9PR.

I am a Chartered Engineer, a Member of the Chartered Institution of Highways and Transportation, and a Member of the Chartered Society of Forensic Sciences. I also have a University Certificate in Forensic Road Collision Investigation from De Montfort University.

I hold The Cardiff Law School Bond Solon Expert Witness Civil Certificate (2012), Criminal Certificate (2012), and am a Member of the Expert Witness Institute.

My specialist fields are road safety, highway maintenance, and highway asset and risk management, in which I have been involved since 2002. Further details of my qualifications and experience relevant to this report are given in Appendix A.

### 1.2 Instructing Organisation

I was instructed on this case by States of Jersey Police on 4<sup>th</sup> July 2016.

### 1.3 Material instructions

The substance of all material instructions on the basis of which this report was written is:

- Letters, emails and oral communications from States of Jersey Police;
- The documents listed in Appendix B.

I am asked to provide my opinion on:

- the design of the highway at the collision site; and

- the treatment of the highway around the boundaries of the Millennium Park:

#### 1.4 Other documents used

In preparing this report I have also relied on the published material listed in Appendix C.

#### 1.5 Site visit

I undertook a site visit on 8<sup>th</sup> July 2016, in which I was accompanied by DC [REDACTED] and DC [REDACTED]

#### 1.6 References

Where reference is made in the report to items listed in the Appendices, these are indicated on at least the first occasion in superscript by the Appendix letter followed by the item number within the Appendix, e.g. Appendix B Item 1 shown thus: <sup>(B1)</sup>.

### 2 THE SITE

2.1 Tunnell Street is a single carriageway orientated east to west, running between St Saviour's Road and Robin Place<sup>(D1)</sup>. Travelling from the junction with St Saviour's Road at its eastern end, Tunnell Street continues in a straight line<sup>(D2)</sup> until the point where a pedestrian and cycle path running between Belmont Road to the south and Tunnell Street, emerges<sup>(D3)</sup>. At this point Tunnell Street travels around a right-hand 90° bend, continuing northwards towards a pedestrian entrance to Millennium Park, at which point it turns around a second 90° bend, this time to the left<sup>(D4)</sup>. At this bend the road becomes Robin Place which continues in a straight line towards Bath Street to the west<sup>(D5)</sup>.

2.2 Tunnell Street is of a width where two vehicles travelling in opposite directions would be able to pass each with care, but too narrow for the inclusion of centre-of-carriageway markings. Robin Place is narrower but is a one-way street for traffic travelling towards Bath Street. The two roads are bordered on both sides by narrow footways.



- 2.3 The cut-through between Belmont Road and Tunnell Street is for use by pedestrians and cyclists. However, there is vehicular access to and from Tunnell Street to a private parking area which has spaces marked for 5 vehicles. Direct vehicular access from Belmont Road is prevented by two metal post and bar fences forming a chicane<sup>(D6)</sup>.
- 2.4 Alongside Belmont Road the footway is surfaced with a red bituminous material with tactile paving and metal bollards highlighting the location of a raised zebra crossing immediately opposite the entrance/exit of the cut-through<sup>(D7)</sup>. From Belmont Road the cut-through passes through a deep archway formed by buildings on either side and above<sup>(D6)</sup>.
- 2.5 The surface of the cut-through is constructed from a palette of pink/red, cream and grey paving slabs with dark setts used to form a feature in the path<sup>(D8)</sup>. Coloured setts, from the same type of palette as the paving slabs but including a number which are darker grey, have also been used to provide a wide strip across the full width of the path where it joins with Belmont Road and Tunnell Street<sup>(D9 and D10)</sup>. While the paving slabs provide a smooth surface, the setts have an uneven surface texture with exposed mortar between.
- 2.6 Within these setts at the Tunnell Street end there are two metal bollards, with the left-hand one appearing to be moveable such that it can be left permanently in its up or down position<sup>(D11)</sup>. Almost directly above these bollards is a stone lintel between the building on the left-hand side and a high stone wall to the right.
- 2.7 The carriageway on Tunnell Street in the immediate vicinity of the two 90° bends is raised so that it is flush with the footways. While the rest of Tunnell Street is surfaced using a bituminous material, in this area both the carriageway and footway are surfaced with setts, laid diagonally, using a similar palette of colours to those on the cut-through. However, those used on the carriageway contain some that are darker than those used on the footway, as have been used in the areas at the end of cut-through<sup>(D12)</sup>. A continual line of grey setts, flush with the surrounding surfaces has been used to provide a visual demarcation of the carriageway and footways<sup>(D13)</sup>.

2.8 Approaching this area in a west-bound direction, a vehicle would pass a 'Give-way' post-mounted sign accompanied by a yellow 'give-way' line on the carriageway surface<sup>(D3 and D14)</sup>. The transition between the two types of surfacing and layout is also marked by a shallow road hump immediately preceded by a row of paving slabs and several rows of setts<sup>(D14)</sup>. The slope of the hump itself is surfaced in a red bituminous material and marked with two white road hump markings for west-bound traffic<sup>(D15)</sup>.

2.9 The whole of the area is lit by a system of street lighting.

### 3 THE INCIDENT

3.1 On 27<sup>th</sup> June 2016, at approximately 15.51 hours, Clinton Pringle was seen running through the pedestrian cut-through from Belmont Road to Tunnell Street towards Millennium Park. It is believed that he was following his cousin, a 6-year-old girl. His mother, Stacey Pringle, and aunt, Melissa Anderson, were some way behind him.

3.2 Shortly after Clinton ran onto Tunnell Street a Volkswagen Transporter, travelling between St Saviour's Road and Bath Street, turned around the corner. Clinton had stopped in the road and was struck by the vehicle.

3.3 Photographs<sup>(B1)</sup> taken by States of Jersey Police approximately an hour after the collision show that it was dry and sunny. The end of the cut-through at Tunnell Street was cast in shadow from the building immediately adjacent to its left-hand side (when travelling in the same direction as Clinton and his family).

3.4 The right-hand bollard at the end of the cut-through was in the upright position, but the left hand one was flush with the road surface. The face of the small blue sign, mounted on the right-hand bollard and advising 'CAUTION cyclists rejoin carriageway', was facing towards Tunnell Street<sup>(D18)</sup> and not visible to anyone walking through the cut-through from Belmont Road. There was no other signage present warning pedestrians or cyclists that they were approaching a carriageway<sup>(D17 and D19)</sup>.

3.5 A vehicle was parked in the marked bays at the left-hand side of the cut-through<sup>(D16)</sup>. Another vehicle was parked in Tunnell Street on the footway

area, parallel to the carriageway and adjacent to the railings of Millennium Park<sup>(D20)</sup>.

#### 4 SITE INSPECTION

I undertook a site visit on 8<sup>th</sup> July 2016, in which I was accompanied by DC [REDACTED] and DC [REDACTED]. The weather was warm, sunny and dry with no dampness or water on the carriageway or footway surfaces.

- 4.1 I viewed the area in Belmont Road in the vicinity of the pedestrian crossing, the cut-through to Tunnell Street, Tunnell Street itself and Robin Place. I walked through Millennium Park from and to Tunnell Street, as well as traversing the park perimeter by walking west along Robin Place, north along Bath Street, east along Gas Place and Oxford Road, before coming back through the eastern end of the park to Tunnell Street.
- 4.2 As I was on site in the morning, the shadows were not as extensive over the Tunnell Street as they were at the time of the collision on 27<sup>th</sup> June 2016 or at the time the police photographs were taken. However, even without the presence of this shadowing I observed that, while walking along the cut-through from Belmont Road, the change in surfacing at the end of the cut-through and the difference between the setts used in the carriageway and footway on Tunnell Street, were not at all apparent. The differences were further masked by the shadow cast by the stone lintel onto the footway surface just beyond the cut-through.
- 4.3 The setts used to delineate the carriageway and footway, because of their position in what appeared to be, from the cut-through, the centre of the surfaced area, with the surface on either side appearing to slope into them, I believe could easily be mis-interpreted as the grating on a channel drain similar to that present on the cut-through. This further disguises the true nature of the layout on Tunnell Street and the potential presence of through-traffic.
- 4.4 The difference between the two surfaces, on a sunny day, was also not that clear when walking towards the park exit<sup>(D21)</sup>. However, the view of

approaching vehicles was reasonable and therefore allowed pedestrians using the carriageway sufficient time to move out of the way if necessary.

- 4.5 The bollard-mounted sign for cyclists had been turned to face cyclists exiting the cut-through onto Tunnell Street with a large new sign placed alongside warning pedestrians and cyclists of the presence of the carriageway and the possibility of traffic approaching from both the right and left.
- 4.6 The reason for the give-way sign and carriageway marking on the Tunnell Street approach to the 90° bend at the end of the cut-through was not clear as, at that point, a driver would be unable to see a pedestrian, cyclist or vehicle approaching the exit to the cut-through, as they would be masked by the high stone wall.
- 4.7 A similar surface treatment, with the setts laid diagonally, had been used on area outside the park entrance in the vicinity of the junction of Gas Place and Oxford Road<sup>(D22)</sup>. However, without any tunnel-like approach, the presence of bollards at the edge of the carriageway and the more generous width of the footway given the land available, I felt that the layout had much more clarity in relation to the interaction between pedestrians and motorised vehicular traffic.
- 4.8 The grey setts used to mark the edge of the carriageway have also been used in this location to indicate a second demarcation within the footway. My assumption is that, as the footway is signed as a shared footway and cycleway, these setts are intended to provide a level of segregation between the users. However, my observations of users were, that, if this was understood, the area was not being used in this way.
- 4.9 *Materials and layout used at other junctions in the area surrounding the Millennium Park*
- 4.9.1 The type and palette of setts used at the junctions of Tunnell Street with Robin Place and at Gas Place with Oxford Road, in the areas where vehicles and pedestrians were likely to interact, were replicated at the exit of Robin Place onto Bath Street, at the location where pedestrians would cross the mouth of the junction<sup>(D23)</sup>. However, here the setts in the carriageway

were laid at 90° to the direction of travel and were not accompanied by any give-way markings or signage for vehicular traffic. Tactile paving had been included at the edge of each footway.

- 4.9.2 The same type of layout is used at the junction mouth of Gas Place, at the edge of Bath Street<sup>(D24)</sup> although the tactile paving was situated removed from the carriageway edge in order to accommodate the cycle lane section of the shared use footway.
- 4.9.3 The layout is duplicated at the junction of Common Lane with Oxford Road, but without any tactile paving present in the footway and no give-way signage or marking for vehicles joining Oxford Road<sup>(D25)</sup>.
- 4.9.4 However, at the pedestrian crossing point in the junction mouth of Apsley Road with Gas Place the pedestrian crossing area had been marked by setts laid out to form coloured stripes instead of the more random pattern used elsewhere<sup>(D26)</sup>. In this location there was no tactile paving and no give-way signage or marking for vehicles. The same layout can be found at the junction of Chevalier Road with Gas Place.
- 4.9.5 The more random pattern of setts is once again used at the junction of L'Avenue et Dolmen du Pré des Lumières with La Rue le Masurier, although here the area they cover is considerably narrower, and they are laid into the carriageway surface beyond the give-way line<sup>(D27)</sup>. While tactile paving is positioned close to the junction for a pedestrian to cross La Rue le Masurier, there is no tactile paving to indicate a crossing point across the junction mouth. The purpose of the setts here would therefore seem to be different from the other junction described.
- 4.9.6 At the entrance at the eastern end of the park onto L'Avenue et Dolmen du Pré des Lumières the carriageway surface contains no setts to highlight the area<sup>(D28)</sup> but at the entrance directly opposite onto Tunnell Street, setts have again been utilised on the carriageway surface, laid at 90° to the direction of travel<sup>(D29)</sup>. In both locations the footway surface comprises paving slabs similar to those used on the cut-through from Belmont Road.

## 5 DESIGN STANDARDS

- 5.1 There are no design standards which must be followed by engineers in relation to the layout of footways and carriageways. Even in the UK on the trunk road and motorway network, where Highways England have more stringent requirements, designers are still required to use engineering judgement.
- 5.2 Manual for Streets<sup>(C1)</sup> and Manual Streets 2<sup>(C2)</sup>, while only applying formally in England and Wales, provide useful guidance on the design of lightly trafficked residential streets as well as busier streets and non-trunk roads. The concept of 'shared space' is considered in Manual for Streets 2 which describes their commonly used characteristics as being the minimal use of traffic signs, road markings and other traffic management features, encouraging motorists to recognise the space as being different from a typical road and to react by driving more slowly and responding directly to the behaviour of other road users. The schemes also tend to feature a level surface with no kerbs and no level difference between pedestrians and vehicular traffic. The aim of reducing the definition of areas is to indicate that the street is meant to be shared equally by all users of the highway<sup>(C2)</sup>.
- 5.3 The document sets out some of the emerging issues that were identified in the UK at the time of publishing. These include, relevant to this collision:
- taking a comprehensive approach to the design, with clear objectives as what the scheme is intended to achieve;
  - the likely importance of achieving vehicle speeds of under 20mph;
  - comprehensive redesign of the space is likely to lead to the most effective schemes;
  - traffic network design is considered in order to manage the flow of vehicles so that pedestrians are willing to use the space as intended;
  - schemes need to be designed in three dimensions, as vertical features as well as cross sections can influence driver behaviour;

- transition zones or gateway treatments are useful for indicating to motorists that they are entering a place where it is expected that road users will behave differently;
- tactile features are provided to enable visually impaired users to be able to negotiate the space; and
- the provision of surfaces in contrasting tones can assist partially-sighted pedestrians, however it should be remembered that colour-fading, dirt, wet weather, low light etc. can impact on the level of contrast.

5.4 Both Manual for Streets and Manual Streets 2 recommend that a Quality Audit, which includes the Road Safety Audit process, is undertaken. The purpose of such an audit is to ensure that appropriate consideration is given to all of the relevant aspects including safety, ease of use of the scheme by different types of users, visual quality, and accessibility.

## 6 ROAD SAFETY AUDITS

6.1 The purpose of a Road Safety Audit (RSA) is:

*"to check that the design has adequately addressed all safety issues in order to minimise the number and severity of situations in which road users are injured whilst using the public highway."*<sup>(C2)</sup>

6.2 Best practice guidance recommends that the audit should be a formal, systematic, independent assessment of the potential road safety problems associated with a new road scheme or road improvement scheme, with equal emphasis placed on all road users. It should be carried out by experienced staff who are independent of the scheme<sup>(C3)</sup>. Although it is acceptable for them to work for the same organisation as the designers, best practice guidance recommended no-one should audit their own scheme. The process contains four key stages:

- stage 1 - concerned with the preliminary design;
- stage 2 - detailed design;



- stage 3 – post construction (pre-opening or as soon as possible after opening to traffic); and
- stage 4 – monitoring (once scheme has been open for 12 or 36 months).

6.3 A combined Stage 1 and 2 audit can be carried out if a preliminary design has not been deemed necessary.

6.4 Stages 1 to 3 should consider any potential road safety problems which may affect any users of the highway, and suggest measures to eliminate or mitigate them. Stage 4 should consider in detail the records of any personal injury collisions which have occurred, to identify their locations and ascertain common causation factors. This data should also be compared to the records of collisions which occurred at the same location prior to the scheme being implemented<sup>(C3)</sup>. None of the safety audits should be considered as a technical check of the design or implemented scheme.

## 7 THE DESIGN OF THE SHARED SPACE AREA ON TUNNELL STREET

7.1 The drawings<sup>(B15 to B27)</sup> provided to me indicate that the modifications to the layout of Tunnell Street to that found at the time of the collision occurred alongside, and as a result of, the development of the Millennium Park. However, while the work on the park was undertaken on behalf of the then Transport and Technical Services Department (TTS), the highway works were the responsibility of the Parish of St Helier, the highway authority for the surrounding roads<sup>(B4)</sup>.

7.2 At the time of this work the cut-through to Belmont Road had not been opened up, although there was vehicular access from Tunnell Street to the building located alongside the area.

7.3 The Transport Assessment<sup>(B5)</sup> for the park, which was produced in December 2010, includes some detail of the proposed traffic management arrangements. It states that Robin Place and a section of Tunnell Street would be closed to through traffic, with access controlled by a system of rising bollards located on the corner where the two streets meet.



- 7.4 The report also refers to the proposal to provide a pedestrian and cycle link between Tunnell Street and Belmont Road but, as it was not certain as to whether the right of way could be achieved, the link was only treated as an option within the assessment.
- 7.5 During the consultations and related documentation pertaining to the Millennium Park it would appear that some concerns were expressed in relation to traffic on the roads around the park, in some cases this related to traffic speed and safety and the impact on the surrounding roads<sup>(B6, B9 and B10)</sup>. While acknowledging that the roads surrounding the site are under the authority of the Parish of St Helier, in the report for the Ministerial Meeting<sup>(B10)</sup> dated 8<sup>th</sup> February 2011, it is stated that the TTS, in conjunction with the Parish Roads Committee, were considering road calming measures around the site and that an independent RSA would be undertaken.
- 7.6 A Safety Review was carried out by a company called TMS in January 2011. This was a desk top study based on the Transport Assessment and only three drawings which, it would appear from the brief report produced, did not include high levels of detail about the design for the scheme. In this report no issues are raised in relation to the Tunnell Street or Robin Place.
- 7.7 Drawings<sup>(B15 to B17)</sup> showing the three options for the area of Tunnell Street where the collision occurred, all show the rising bollards located across the carriageway at the start of Robin Place. The drawings are dated April 2011.
- 7.8 A desktop Safety Review<sup>(B12)</sup> was undertaken by TMS in April 2011, although solely into the restricted access proposals on Tunnell Street and therefore based on the drawings of the three options relating to the positioning of the turning head and the location of the rising bollards on Robin Place<sup>(B15 to B17)</sup>.
- 7.9 The absence of the bollards from later design drawings<sup>(B19 to B27)</sup>, dated November 2011, suggests that these had been taken out of the scheme by this time, although there is nothing contained in the documentation provided to me which gives any explanation as to when, or why, this decision was made.

7.10 The proposal document relating to the cut-through between Belmont Road and Tunnell Street, produced by the Parish of St Helier<sup>(B28)</sup>, refers to the fact that work to pave both the carriageway and footway and create a flush surface was ongoing at the time of the report's writing. It confirms that this was done as a result of the unacceptably narrow footpath alongside this section of Tunnell Street.

7.11 While a copy of drawing number 10244.854 showing the paving pattern layout at the shared surface, and referenced in the streetscape plan drawing dated November 2011, is not contained in the documentation provided to me, I would have expected it to be available for any safety audits carried out after this time.

7.12 However, there is no paperwork relating to any other safety review or RSA undertaken in respect of the detailed design of the layout of Tunnell Street/Robin Place contained in the documentation provided to me.

## 8 AUDIT POLICY IN PLACE IN THE PARISH OF ST HELIER

8.1 The Parish of St Helier's Road Safety and Design Audit Policy – R1<sup>(B13)</sup> states:

*"All highway improvement schemes where there is an impact on road user behaviour, adjacent business or residential property, or the environment will necessitate an audit."*

8.2 The audit comprises two stages with Stage 1 being an initial assessment and a recommendation for approval, or otherwise, for the scheme to move to the next stage. Stage 2 looks at the design and detailing of the proposal based on best practice, statutory requirements and design materials. Issues which may be investigated and reported upon in an audit include, of particular relevance to the collision site:

- how the proposal will impact on adjacent businesses, residential properties, pedestrians, cyclists and motorised users;
- forward and transverse visibility; and

- risk to pedestrians, cyclists and motorised vehicles.

8.3 The policy document includes template RSA forms for both Stage 1 and Stage 2.

## 9 THE ADDITION OF THE CUT-THROUGH FROM BELMONT ROAD

9.1 The proposal document produced by the Parish of St Helier<sup>(B28)</sup> in relation to the cut-through between Belmont Road and Tunnell Street and which is undated, sets out key decisions which will be required of which two are of particular relevance to this collision:

- the materials used to warn both cyclists and pedestrians at each end of the thoroughfare; and
- important safety signage required at each exit/entrance.

9.2 The measures listed in the proposal included forming bollard chicanery to slow vehicles at both exits. However, such a system at the Tunnell Street end, if constructed in a manner that was truly effective, would have impacted on the ability of vehicles to access the parking area adjacent to the cut-through.

9.3 In relation to signage, the report goes on to state that exits onto Tunnell Street and Belmont Road are to be highlighted to avoid potential accidents to cyclists and other road users, with an accompanying note to consult the Traffic Engineering section.

9.4 The revised report<sup>(B29)</sup>, issued on 5<sup>th</sup> March 2014, sets out the steer received from members on a number of topics in relation to the scheme, including materials and signage. In the case of the former, the paving on the cut-through should be flat with strips of cobbles at the end of the link, and possibly at intervals, to slow cyclists. The steer in relation to signage does not include anything on the warning signage mentioned in the initial report.

9.5 In line with its Safety and Design Audit Policy, the Parish of St Helier undertook a Desk Top Assessment as well as a Safety Audit and Assessment of the cut-through scheme.

9.6 The Desk Top Assessment<sup>(B30)</sup> lists the factors which it is believed, indicates safe passage when using the cut-through. It is stated that traffic is slowed by:

- the new shared surface with the equal rights of pedestrians and vehicles;
- the entry over a ramp for vehicles into the shared space;
- the road geometry with two 90° turn.

9.7 It also cites the 'Access Only' designation as lowering traffic numbers to very low levels.

9.8 I believe when making such judgements, observations should be made on site to confirm or otherwise the validity of such factors, as an incorrect assumption could have a significant impact on the safety of road users. This would be especially important in relation to this scheme, where no traffic measurements had been taken since the alteration made to the roads around the Millennium Park.

9.9 The assessment confirms the safety measures to be introduced as:

- two large diameter bollards, with one being automated;
- granite setts set in a band to raise awareness of the transition; and
- signs to warn cyclists that they are re-joining a road when exiting.

9.10 In addition to these measures, the Safety Audit and Assessment<sup>(B31)</sup> refers to the introduction of the give-way line, sign, road hump and related markings. However, the plans for the original shared space scheme show the road hump as forming the transition between the two types of road environment. It possible therefore that only the give-way signage was added.

9.11 The visibility at the exit to the cut-through onto Tunnell Street was deemed "ok" as speed through the bends "should be minimal because of the road layout/hump/Give Way signage".

9.12 While I agree that the visible 90° bend would limit traffic speed on the approach to the exit of the cut-through and the shared space area, my observations on site were that the other two features had little, if any, impact on driver behaviour or speed.

9.13 There is no information contained with the Safety Audit and Assessment as to when any site visit took place, or the prevailing conditions. I am therefore unable to determine whether it is possible that the conditions which impeded a pedestrian's ability to appreciate the nature of the situation on Tunnell Street, should have been observed and taken into consideration in assessing whether any other safety measures may be required.

## 10 CONCLUSIONS AND OPINION ON THE CASE

10.1 My own observations when I attended the site were, when approaching Tunnell Street from the cut-through from Belmont Road, the nature of the area between the end of the cut-through and the park entrance was not readily apparent.

10.2 Even if the sign cautioning cyclists had been facing in the direction intended, its size was such that I do not believe it would have been perceived, and the information contained on it processed, if at all, until a road user was almost at the exit onto Tunnell Street.

10.3 The shadows cast by the lintel at the end of the cut-through, and at certain times, the buildings adjacent to the street, when combined with patches of bright sunlight, in my opinion, minimised the slight differences between the palettes used on the footway and on the carriageway. The lintel shadow also made it difficult to distinguish from distance the setts laid in a strip across the exit.

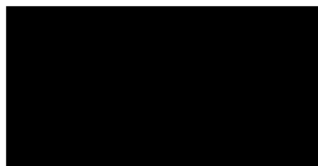
10.4 The high wall extending to the length of the cut-through to the edge of the footway blocked the view of the rest of Tunnell Street from a pedestrian walking along the cut-through from Belmont Road. As a result, it is my belief that there would be likely to be few visual cues to someone unfamiliar with the area, that a vehicle could be approaching from the right-hand side.

- 10.5 Further, during my time on site, I did not witness the driver of any vehicle modify their driving in response to the give-way signage present just prior to the start of the shared space surface. I believe that without the reason for the presence of this signage being apparent to drivers, it is unlikely that would it prove effective in slowing traffic speed, even when accompanied by a road hump, which in this case was very shallow, and associated markings. I therefore do not believe that these features were sufficient to significantly lower the risk to cyclists, and some pedestrians, exiting the cut-through.
- 10.6 In my opinion the differences in the colours of setts used on the carriageway and footway are also not apparent when exiting the park onto Tunnell Street in the conditions of bright sunlight present while I was site. However, it is my belief that design of the shared space area is considerably less of a safety concern from this direction as pedestrians and other vulnerable road users have a greater opportunity to perceive the surrounding area and cues as to the possible presence of vehicular traffic. They also have a longer period of time to react to an oncoming vehicle than a similar road user exiting the cut-through.
- 10.7 I believe it likely that had a safety audit being undertaken after the scheme had been constructed, these issues would have been identified and an opportunity would have been provided for improvements to have been made.
- 10.8 While on site I was asked to look at the other modifications which had been implemented on the roads around the park boundary. I observed that there were some variations between the different areas, in relation to the pattern in which the paving setts were laid, as well as the use of give-way signage. In the case of the former, it is my opinion that consistency in the approach taken at junctions would provide greater clarity and road user understanding as to the behaviour required.

11 DECLARATION

- 11.1 I understand my duty as an expert witness is to the court. I have complied with that duty and will continue to comply with it. This report includes all matters relevant to the issues on which my expert evidence is given. I have given details in this report of any matters which might affect the validity of this report. I have addressed this report to the court. I further understand that my duty to the court overrides any obligation to the party from whom I received instructions.
- 11.2 I confirm that I am aware of the requirements of Part 35 and Practice Direction 35, and the Guidance for the Instruction of Experts in Civil Claims (2014).
- 11.3 I confirm that I have made clear which facts and matters referred to in this report are within my true knowledge and which are not. Those that are within my true knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.
- 11.4 I confirm that I have no conflict of interest of any kind, other than any which I have already set out in this report. I do not consider that any interest which I have disclosed affects my suitability to give expert evidence and I will advise the party by whom I was instructed if, between the date of this report and the trial, there is any change in circumstances which affects this statement.

**Signed**



**Name** Alexandra Elizabeth Anne Luck

**Date** 13<sup>th</sup> October 2016

## APPENDIX A MY RELEVANT QUALIFICATIONS AND EXPERIENCE

### Higher Academic Qualifications:

B.Sc. with Honours in Psychology (University of Birmingham, 2000)

M.Sc. in European Traffic and Transportation (Nottingham Trent University, 2006)

University Certificate in Forensic Collision Investigation (DeMontfort University, 2006)

The Cardiff Law School Bond Solon Expert Witness Civil Certificate (2012)

The Cardiff Law School Bond Solon Expert Witness Criminal Certificate (2012)

### Professional Qualifications

Chartered Engineer

Chartered Institution of Highways and Transportation (CIHT) – Member

CIHT Asset Management Panel – Chair

Chartered Society of Forensic Sciences - Member

World Road Association – Member and Technical Committee Member

Expert Witness Institute – Member

### Training

Advanced Accident Engineering (RoSPA, 2004)

I have undergone the following Bond Solon expert witness training:

- Excellence in Report Writing (2011)
- Courtroom Skills (2011)
- Cross-Examination Day (2012)
- Civil Law and Procedure (2012)
- Criminal Law and Procedure (2012)

I hold a comprehensive annual CPD record



## **Work Experience:**

***October 2008 – Present***

### **A Luck Associates Principal**

Providing services to the public and private sectors including:

- Developing and updating asset and risk management plans, policies and regimes for all aspects of highway policy, investment and operations including safety, asset data collection and valuation, service and condition inspections, setting levels of service and determining priorities and programmes
- Developing policies and life-cycle plans which aim to preserve the longevity of highway assets and create future savings
- Assisting with the implementation of proportionate, structured and auditable management systems to control and minimise risk and to defend claims against alleged failure
- Auditing of policies and procedures to assess whether a highway authority's duties and statutory obligations are being fulfilled, and its operational and policy objectives being met
- Improving data collection and analysis to enable information to be combined to create a holistic view which facilitates the identification of trends, enhances programmes of work to secure best value, and enables monitoring of performance
- Analysis of collision data and investigation of collision problems on site
- Establishing processes and support mechanisms for the handling of fatal and life-threatening road traffic collisions from a highway authority perspective
- Developing holistic safety measures to bring about behavioural and physical changes leading to casualty reduction, by adapting and incorporating best practice from across the world
- Developing local design standards to improve safety, sustainability and quality of life, as well as guidance on assessing and managing the risks of innovation in highway management
- Building closer working relationships and developing effective partnerships with key stakeholders in highways and transportation, including other agencies such as the Police
- Training and knowledge sharing to improve practitioners' understanding of statutory duties and responsibilities, management of highway assets, safety, and service delivery
- Training and advice on managing the reciprocal relationship between the highway and its environment, and the impact of each on road user behaviour, safety, personal security and health
- Training and advice on the implications for highway improvement and management of road user behaviour and limitations
- Training and advice on the role of highway design and management in road traffic collisions
- Expert witness on contribution of highway issues to road traffic collisions in both criminal and civil cases

***June 2007 – September 2008***

**Atkins**

**Road Safety Consultant**

- Leading on the co-ordination and development of the road safety service across the Atkins Highways and Transportation sector
- Responsibility for that writing and implementation of a business plan to grow the road safety business
- Developing an understanding of the skills and capabilities within the existing road safety business
- Developing new services with an accompanying marketing strategy in response to market research
- Establishing and developing relationships with clients in business growth areas
- Managing bids and proposals
- Management of specialist asset management projects within the Business Improvement Team

***April 2006 – June 2007***

**Gloucestershire Highways (Gloucestershire County Council)**

**Risk Manager – Asset Management**

- Developing a clear comprehensive understanding and assessment of the risks involved in the management of the highway and transportation network, and the consequences for the County Council and Gloucestershire Highways
- Developing and updating risk management plans, policies and regimes for all aspects of highway policy, investment and operations
- Developing a risk-based approach to scheme selection and design to secure best value for money
- Ensuring risks are controlled and minimised in accordance with documented plans and policies
- Ensuring the efficiency, accuracy and quality of information and record systems to allow effective management of the service and the defence of claims against the authority for alleged failure
- Acting as a central point of contact, on a 24-hour callout when necessary, in the event of a fatal collision and in the event of an investigation by the police
- Managing all budgets within the Risk Management area
- Providing line management to the Accident Investigation, Safety Inspection, and Arboricultural Teams
- Deputising for the Asset Manager

***June 2002 – April 2006***

**Gloucestershire County Council  
Accident Investigation Engineer – Accident Investigation and Prevention,  
Capital Programme Unit (Road Safety)**

**Accident Investigation Engineering:**

- Interrogating the collision database to identify routes/areas with a high proportion of injury collisions
- Investigating collision problems on site, developing remedial measures and overseeing their implementation
- Visiting fatal and serious collision sites with the Police
- Liaising with officers and other agents, including those working in highway maintenance and traffic management in a position to introduce measures to help deliver casualty reduction
- Gathering and maintaining performance management information, including the monitoring of capital and revenue safety schemes
- Preparing reports for and making presentations to the Department Management Team and elected Members

**Delivery of the Skidding Resistance Policy:**

- Investigating the results of SCRIM surveys undertaken on the Strategic Network
- Organising and leading site investigations in the light of survey results
- Setting and reviewing Investigatory Levels using evidence from site investigations, SCRIM surveys and the collision database
- Managing the prioritisation and programming of remedial treatments to address skid related collisions and risk

**Overseeing the data analysis and engineering aspects of the Gloucestershire Safety Camera Partnership:**

- Providing line management support to the Safety Camera Partnership Data Analyst to ensure that targets and objectives of the project were achieved on time
- Ensuring effective management of capital and revenue budgets within the Data Analyst's remit

**Managing and reporting on capital and revenue budgets in support of road safety work programmes.**

APPENDIX B DOCUMENTS INCLUDED WITH INSTRUCTIONS TO ME

- B1 Scene photographs taken by States of Jersey Police on 27<sup>th</sup> June 2016
- B2 Scene photographs taken by States of Jersey Police on 28<sup>th</sup> June 2016
- B3 Aerial scene photographs taken by States of Jersey Police on 1<sup>st</sup> July 2016
- B4 Letter from States of Jersey Department of Infrastructure to States of Jersey Police dated 08-8-2016
- B5 St Helier Town Park Transport Assessment prepared by Parsons Brinckerhoff dated December 2010
- B6 Letter from States of Jersey Police to States of Jersey Planning and Environment Department dated 30-12-2010
- B7 Millennium Town Park Safety Review prepared by TMS dated January 2011
- B8 Letter from States of Jersey Transport and Technical Services Department to [REDACTED] dated 02-02-2011
- B9 Second letter from States of Jersey Transport and Technical Services Department to [REDACTED] dated 02-02-2011
- B10 States of Jersey Planning and Environment Department – Report for Ministerial Meeting dated 08-02-2011
- B11 Record of Planning and Environment Ministerial Hearing held on 18-02-2011
- B12 Millennium Town Park – Jersey, Restricted Access Proposals on Tunnell Street, Safety Review Rev B, prepared by TMS, dated April 2011
- B13 Parish of St Helier Road Safety and Design Audit Policy – R1
- B14 Millennium Town Park Southern Border – Layout concept option by Burns + Nice dated April 2011
- B15 Plan of Millennium Town Park Streetscape – Tunnell Street Square Option 1 produced by Parsons Brinckerhoff dated 13-04-2011

- B16 Plan of Millennium Town Park Streetscape – Tunnell Street Square Option 2 produced by Parsons Brinckerhoff dated 13-04-2011
- B17 Plan of Millennium Town Park Streetscape – Tunnell Street Square Option 3 produced by Parsons Brinckerhoff dated 13-04-2011
- B18 Plan of Millennium Town Park Streetscape – Tunnell Street Square including hand written notes and with a cycle link utilising the cut-through from Belmont Road added, undated
- B19 Drawing no. 10244.850 – Work in progress – Streetscapes South, General Arrangements, West & East produced by Burns + Nice, dated 29-11-2011
- B20 Drawing – Millennium Town Park Streetscape, Existing Survey produced by Parsons Brinckerhoff dated 06-01-2012
- B21 Drawing – Millennium Town Park Streetscape, Proposed Carriageway Contours produced by Parsons Brinckerhoff dated 06-01-2012
- B22 Drawing – Millennium Town Park Streetscape, Existing Services produced by Parsons Brinckerhoff dated 06-01-2012
- B23 Drawing – Millennium Town Park Streetscape, Proposed Kerbing produced by Parsons Brinckerhoff dated 06-01-2012
- B24 Drawing – Millennium Town Park Streetscape, Proposed Drainage produced by Parsons Brinckerhoff dated 06-01-2012
- B25 Drawing – Millennium Town Park Streetscape, Proposed Pavement Construction produced by Parsons Brinckerhoff dated 06-01-2012
- B26 Drawing – Millennium Town Park Streetscape, Highway Layout produced by Parsons Brinckerhoff dated 24-01-2012
- B27 Drawing – Millennium Town Park Streetscape, Land Ownership – Implications of Town Park on SoJ & Parish Council Land Boundaries produced by Parsons Brinckerhoff dated 05-03-2012
- B28 Parish of St Helier Technical and Environmental Services – 32 Belmont Road, St Helier – Report for Roads Committee

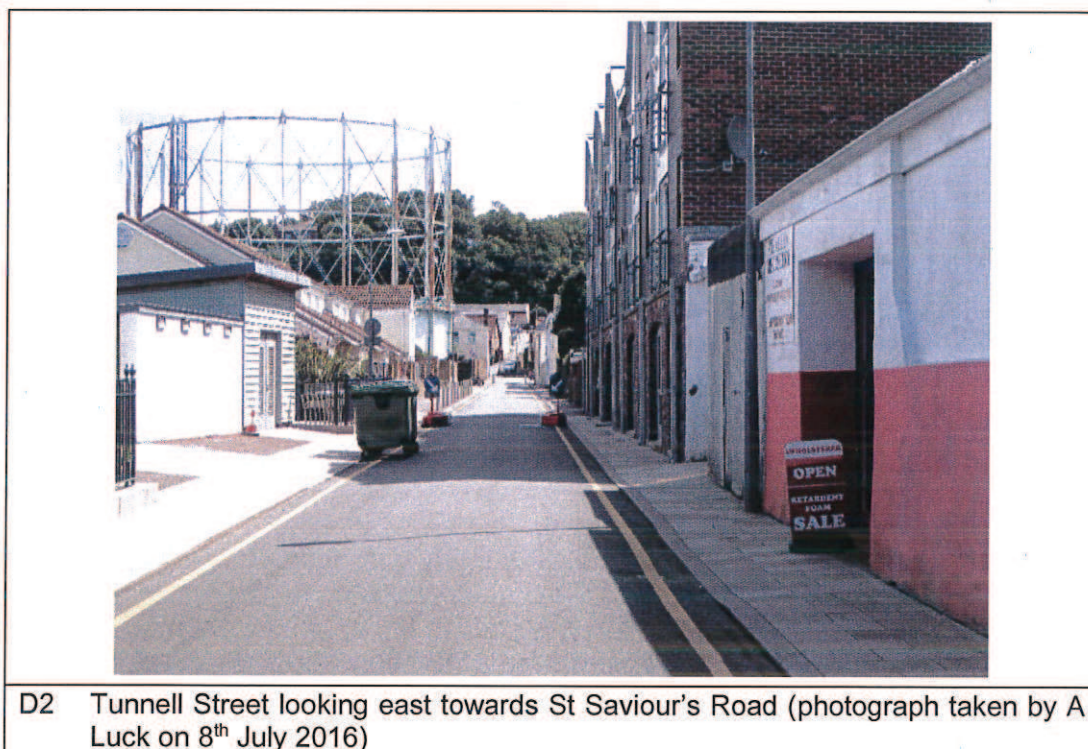
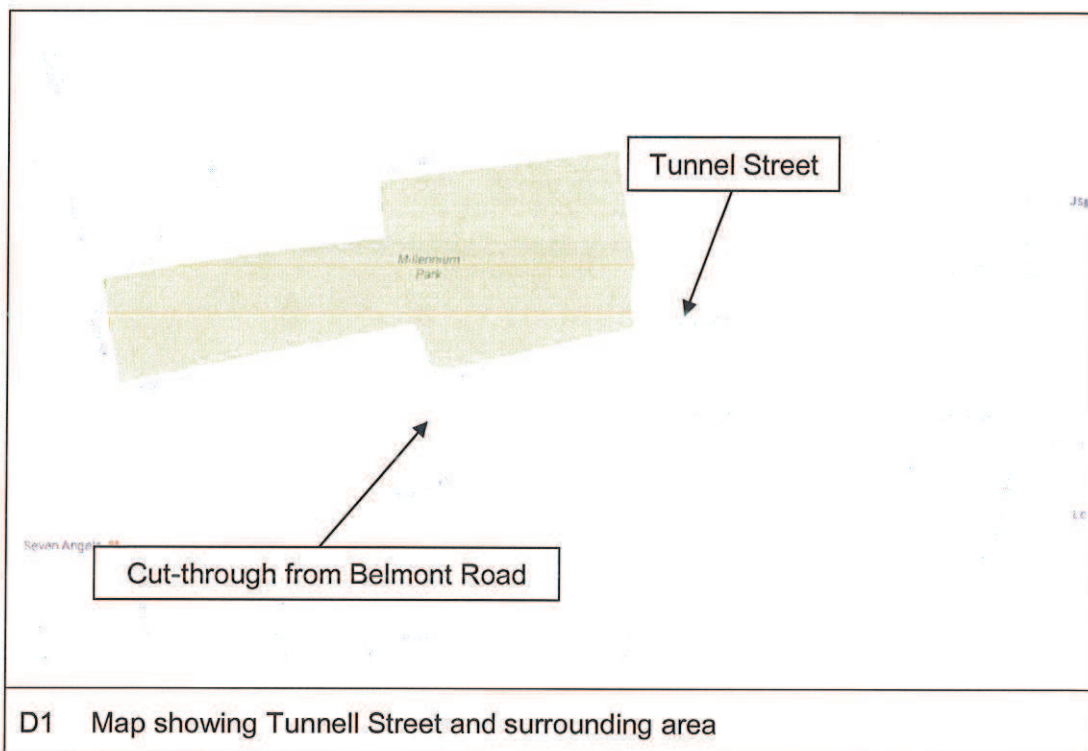
- B29 Parish of St Helier Technical and Environmental Services – 32 Belmont Road, St Helier – Revised Report on pedestrian – cycling link dated 05-03-2014
- B30 Parish of St Helier Technical and Environmental Services – Tunnell Street & New Cut Through, St Helier – Desk Top Assessment dated January 2015
- B31 Parish of St Helier Technical and Environmental Services – Belmont Road Cut Through St Helier – Safety Audit and Assessment dated January 2015
- B32 Stage 1 Road Safety Audit – Belmont Road proposed pedestrian crossing produced by Parsons Brinckerhoff dated February 2015

## APPENDIX C PUBLISHED MATERIAL RELIED ON

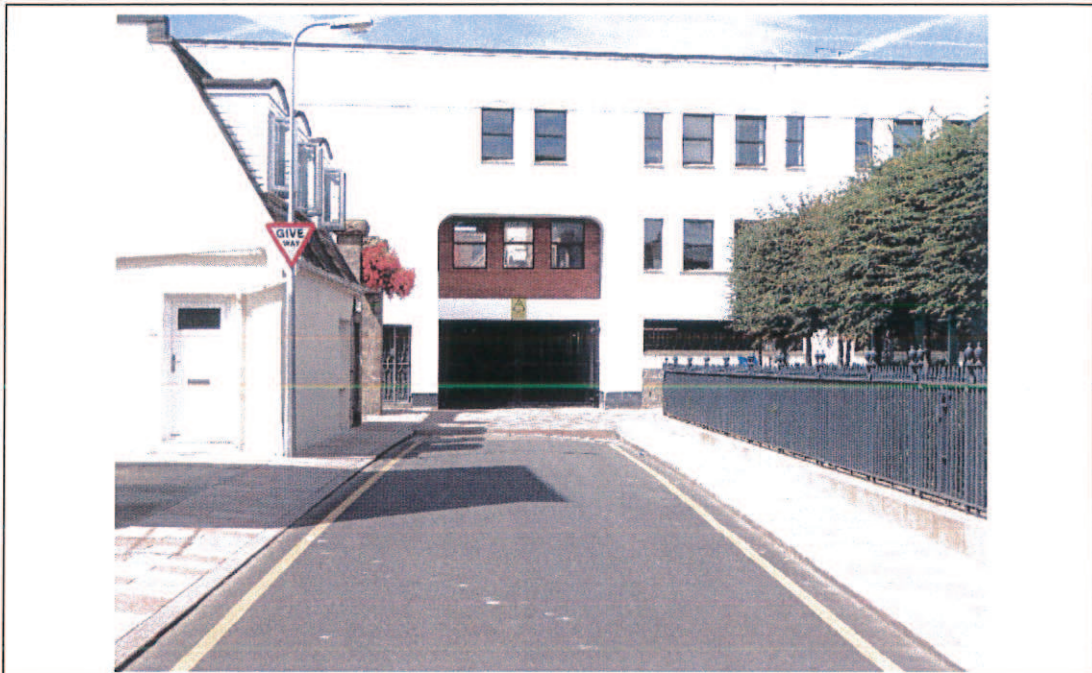
- C1 *Manual for Streets*, Thomas Telford Publishing, London, 2007
- C2 *Manual for Streets 2*, Chartered Institution of Highways and Transportation, London, 2010
- C3 *Road Safety Audit*, Chartered Institution of Highways and Transportation, London, 2009



## APPENDIX D PHOTOGRAPHS AND DIAGRAMS







D3 Tunnell Street on the approach to the 90° right-hand bend (photograph taken by A Luck on 8<sup>th</sup> July 2016)

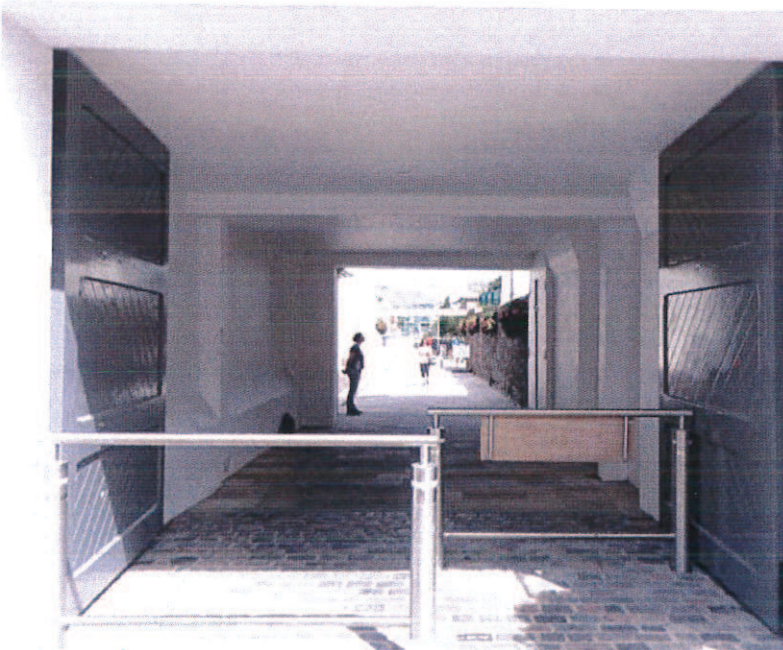


D4 The second 90° bend where Tunnell Street joins Robin Place (photograph taken by A Luck on 8<sup>th</sup> July 2016)





D5 Robin Place looking towards its junction with Bath Street (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D6 The Belmont Road entrance to the cut-through (photograph taken by A Luck on 8<sup>th</sup> July 2016)





D7 The footway and zebra crossing on Belmont Road by the entrance/exit to the cut-through (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D8 The paving and setts used on the surface of the cut-through (photograph taken by A Luck on 8<sup>th</sup> July 2016)





D9 The setts used at the entrances/exits to the cut-through – Tunnell Street end  
(photograph taken by A Luck on 8<sup>th</sup> July 2016)



D10 The setts used at the entrances/exits to the cut-through – Belmont Road end  
(photograph taken by A Luck on 8<sup>th</sup> July 2016)





D11 The metal bollards (one in the raised and one in the down position) at the end of the cut-through by Tunnell Street (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D12 The carriageway and footway surfaces on Tunnell Street at the end on the cut-through (photograph taken by A Luck on 8<sup>th</sup> July 2016)





D13 The delineation between the carriageway and footway (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D14 The give-way line on road hump at the transition between the two surfaces (photograph taken by States of Jersey Police on 27<sup>th</sup> June 2016)





D15 Detail of the road hump at the transition between the two surfaces (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D16 View towards Tunnell Street from the cut-through (photograph taken by States of Jersey Police on 27<sup>th</sup> June 2016)





D17 View towards Tunnell Street from approximately half way along the cut-through (photograph taken by States of Jersey Police on 27<sup>th</sup> June 2016)



D18 The bollard-mounted sign advising to re-join the main carriageway (photograph taken by States of Jersey Police on 27<sup>th</sup> June 2016)





D19 The immediate approach to the end of the cut-through at Tunnell Street (photograph taken by States of Jersey Police on 27<sup>th</sup> June 2016)



D20 The car parked on the footway on Tunnell Street adjacent to the park boundary at the time of the collision (photograph taken by States of Jersey Police on 27<sup>th</sup> June 2016)



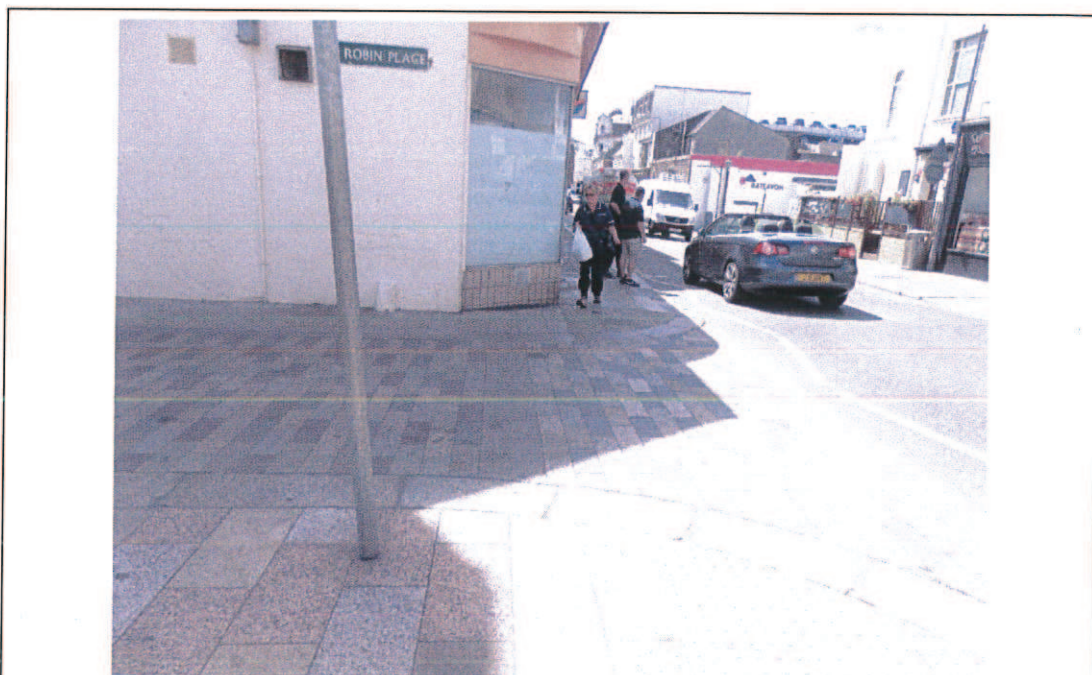


D21 The area on Tunnell Street when exiting the park (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D22 The area at the junction of Gas Place and Oxford Road (photograph taken by A Luck on 8<sup>th</sup> July 2016)





D23 The junction mouth of Robin Place next to Bath Street (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D24 The junction mouth of Gas Place next to Bath Street (photograph taken by A Luck on 8<sup>th</sup> July 2016)





D25 The junction of Common Lane (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D26 The junction of Aspley Road (photograph taken by A Luck on 8<sup>th</sup> July 2016)





D27 The junction of L'Avenue et Dolmen du Pré des Lumières with La Rue le Masurier (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D28 The exit at the eastern end of the park onto L'Avenue et Dolmen du Pré des Lumières (photograph taken by A Luck on 8<sup>th</sup> July 2016)



D29 The exit at the eastern end of the park onto Tunnell Street (photograph taken by A Luck on 8<sup>th</sup> July 2016)