2010 FAI 20

SHERIFFDOM OF LOTHIAN AND BORDERS AT EDINBURGH

DETERMINATION

by

MHAIRI M STEPHEN, Solicitor, Sheriff of Lothian and Borders at Edinburgh

In the Inquiry into the circumstances of the death of BEN HARRY ROBERT McCREATH (DOB: 5 May 2004)

In terms of Section 6 of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976

EDINBURGH May 2010

The Sheriff, having resumed consideration of the cause, in terms of Section 6(1) (a) and (b) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 ("the Act") determines as follows:-

(a) Ben Harry Robert McCreath (date of birth 5 May 2004) died on 14 February 2006 at 15.00 hours at the Royal Hospital for Sick Children, Edinburgh as a result of an accident which occurred earlier on the same day at the Princes Exchange Building, Earl Grey Street, Edinburgh.

(b) Ben McCreath died as a result of head injuries sustained when he fell from the first floor balcony a distance of some 4.74 metres onto the ground floor of the Princes Exchange Building.

Further in terms of Section 6 (1) (d) I make the recommendation that consideration be given to further review and amendment of the Technical Standards for compliance with the Building Standards Regulations in particular to the so-called 100 mm rule.

That rule is discussed fully in this determination and in essence states – *" In and around any non-domestic building where the presence of children is anticipated, gaps in any protective barrier should not be large enough to permit a child's head to pass through. To protect against this , openings in a protective barrier should prevent the passage of a 100mm diameter sphere "*

I recommend that the 100 mm rule should be applied to all non-domestic buildings and not only such buildings where the presence of children is anticipated. That will promote certainty, clarity and safety . That should be the default setting and designers/architects/developers and their agents would require to show exceptional circumstances to allow any relaxation to that rule.

NOTE:

<u>Introduction</u>

During the inquiry I heard evidence from witnesses over 2 phases followed by submissions.

Following a series of preliminary pre inquiry procedural hearings it had been possible to identify the 2 important areas where evidence was required. Careful preparation and co-operation amongst the parties involved in this inquiry has assisted the court immensely to focus on the evidence which required to be heard in open court and the significant body of evidence which was capable of being presented in the form of affidavit or by way of agreed evidence in the form of a joint minute of agreement. A very substantial joint minute of agreement has been lodged and this has served a useful purpose in dealing with matters that were not controversial. Affidavits allowed the evidence of certain witnesses, who spoke about matters which were not central to the issues for this Inquiry, to be brought before the court in written form avoiding the necessity of those witnesses coming to court to give evidence.

It was of considerable assistance to have the opportunity to visit the Princes Exchange Building and view the locus of this tragic accident in order to obtain an overview of the setting and to inspect the detail of specific areas particularly the first floor balcony.

Part 1 of the inquiry considered the design and construction of the Princes Exchange Building including the regulatory regime for such buildings and the ergonomic research conducted and data collated by the Health and Safety Laboratory (HSL) following Ben's accident

In Part 2 of the inquiry I heard evidence relating to the management, occupation and control of the Princes Exchange Building and the duty holders' obligations in the conduct of their respective undertakings and compliance with their obligations and duties in terms of the Health and Safety of Work Act and the Health and Safety at Work Regulations 1999 (Management Regulations). Evidence was also led from an Environmental Health Officer of the City of Edinburgh Council (the enforcing authority). The inquiry heard evidence relating to the independent safety consultants National Britannia- NBL- (now Connaught Compliance) retained by Teesland to assist in the discharge of their duties and obligations under that legislation. During this part of the inquiry focus fell on the risk assessments prepared by these consultants in relation to the Princes Exchange Building

Expert Testimony

Roderic Sylvester-Evans gave evidence during the second part of the inquiry. He heard much of the evidence led during Part 2 about the management and safety regime. He spoke to his report which has been lodged on behalf of Connaught Compliance. He was retained by Eversheds Solicitors (on behalf of Connaught Compliance) to provide

(a) a view on the nature and extent of the obligations placed on the various parties involved in the construction and use of Princes Exchange and, in particular, the obligations place on NBL, as a health and safety consultant in the context in which it was engaged to assess the building; and

(b) an opinion on whether or not the risk assessments undertaken by NBL were "suitable and sufficient".

Mr Sylvester-Evans gave opinion evidence based on his considerable experience over many years of safety management and risk assessment. He had reviewed the productions lodged for the inquiry and visited the locus.

With the agreement of all parties Mr Sylvester-Evans' evidence was led by the Procurator Fiscal Depute. He is the antithesis of the "hired gun" expert. I was greatly assisted to have Mr Sylvester-Evans' evidence and thoughtful opinion borne of an almost unassailable expertise in safety management, accident investigation and hazard/risk assessment. He has provided this expertise to the judiciary in both civil litigation and criminal prosecutions; to disaster inquiries, fatal accident inquiries here and abroad for many years.

He has attested in the body of his report (1.3.3) to the principles which underpin the expert's role and duties in relation to the court.

I accept, with no hesitation, Mr Sylvester-Evans' invaluable opinion as an expert to this inquiry and acknowledge the contribution he made to the evaluation of the evidence and the assessment of the risks and hazards within the Princes Exchange Building and in particular the first floor balcony.

Fatal Accidents and Sudden Deaths Inquiry Act 1976

The statutory framework of the Act constrains my powers.

Provision is made by section 6(1) of the Act for the making of a determination. It provides

> "at the conclusion of the evidence and any submissions thereon, or as soon as possible thereafter, the Sheriff shall make a determination setting out the following circumstances of the death so far as is established to his satisfaction -
>
> (a) where and when the death and any accident resulting in the death took place;
> (b) the cause or causes of such death and any accident resulting in the death;
> (c) the reasonable precautions, if any, whereby the death and any accident resulting in the death might have been avoided;
> (d) the defects, if any, in any system of working which contributed to the death or any accident resulting in the death; and
> (e) any other facts which are relevant to the circumstances of the death".

The point of an inquiry and the scope of the determination that I may make, are therefore limited to the circumstances resulting in the death or any accident resulting in the death. Fatal accident inquiries are not intended to be general enquiries into circumstances that have no causal bearing on the death. A fatal accident inquiry is a fact finding exercise carried out in the public interest and it is important to recognise that there is no power to make a finding as to fault or apportion blame between any persons who may have contributed to the accident.

<u>The tragic events of 14 February 2006</u>

There was a significant measure of agreement regarding the sad events of 14 February 2006. The evidence of what happened that morning came from affidavits sworn by Ben's mother, Louise McCreath, Lisa Egan and Heather Woods (who also gave oral evidence) amongst others

Ben's mother Louise McCreath had been a part- time receptionist with the legal firm Ledingham Chalmers who in 2006 occupied the east part of the first floor of the Princes Exchange building. She required to attend a meeting at her employer's premises to discuss redundancy and the meeting had been arranged for Tuesday, 14 February 2006 with Dorothy Millar, Head of Human Resources at Ledingham Chalmers. This was not one of her working days. She attended for the meeting with Ben who was then 21 months old and said to be “very mobile”.

Louise McCreath drove to the office car park in the basement of Princes Exchange and took the lift direct to the first floor. She chatted with her work colleagues especially Lisa Egan who was in effect her job share partner, also a part time receptionist. Indeed when she went to meet with Dorothy Millar she left Ben playing at reception under Lisa’s watchful eye. However, because she heard Ben crying, Louise took him into the meeting with her and he remained with her in the meeting which lasted in total about 25 minutes.

When the meeting concluded Louise said her farewells, picked up Ben’s belongings and prepared to leave as she had other matters to attend to that day. Heather Woods , her boss, was returning to the office as Louise was leaving. They chatted at the door to Ledingham Chalmers office. As they did so Ben ran off across the balcony and mezzanine floor towards the doors leading to the office on the opposite or west side of the building. That office was unoccupied and was in the course of being refurbished. Louise McCreath shouted on Ben to return however he seemed intent on exploring close to the doors to the other office.

The mezzanine floor or balcony at first floor level linked Ledingham Chalmers office on the east side with the unoccupied office on the west side and also gave access to the main lift and stair case area . Toilets could also be accessed directly from the balcony ..

The balcony was protected by a glazed balustrade barrier 1100 mm in height. The drop from the balcony to the ground floor reception area below was 4.74 metres.

The balcony area is seen in photographs taken by Mark Sutherland, City of Edinburgh Council Environmental Health Department, (Crown production number 3 and 4).

Louise McCreath, to her horror, saw Ben fall from the balcony onto the ground floor foyer below. She rushed downstairs along with her colleague. An emergency call was made to the Scottish Ambulance Service who attended along with police officers. Ben was taken to the Royal Hospital for Sick Children where he died at 15.00 hours on the same day, Valentines Day 2006.

Ben died of head injuries consistent with a fall from a height.

Fuller details of the injuries sustained are to be found in the post mortem report (Crown production number 1). The post mortem was carried out by Professor Anthony Busutill and Dr Kathryn MacKenzie on 17 February 2006.

Ben fell to his death as he was able to pass through a gap between the end of the glazed barrier or balustrade which protected the balcony, and the fire screen wall being the wall of the office area on the west side of the building.

Measurements of the accident scene were taken by Lothian and Borders Police and officers from City of Edinburgh Council Environmental Health Department on 14 February 2006 being the day of the accident and later on 3 March 2006. The measurements at the end of the balcony through which Ben fell are as follows:

- the barrier was 1100 mm in height
- the handrail was 977 mm above floor level
- the gap between the edge of the glass barrier and the face of the bottom transom of the fire screen wall was 150 mm
- the gap between the edge of the barrier and the glass on the fire screen wall was 220 mm (measured between the bottom transom and the second bottom transom)
- the underside of the second bottom transom was 680 mm above floor level
- the gap between the edge of the glass barrier and the top face of the second bottom transom of the fire screen wall was 148 mm (this was 150 mm at the bottom face of the second bottom transom)
- between the second bottom and third bottom transom there was a gap between the edge of the glass barrier and the face of the glass in the fire screen wall was 217 mm

- the drop from the first floor balcony to the ground floor at the point Ben fell was measured at 4.74 metres.

These measurements have been super imposed on a photograph showing the gap between the glass balustrade and the fire screen wall. That photograph is Crown production number 78. There was found to be a corresponding gap on the east side of the mezzanine balcony near to the door leading to Ledingham Chalmers office. That gap was measured between the edge of the glazed barrier and the fire screen wall. These measurements can be found in paragraph 37 of the joint minute of agreement and disclosed gaps slightly larger than the gap on the west side through which Ben fell.

The gaps were temporarily boarded up with in fills on the 14 February 2006(as depicted in Photographs 93;94;95;101 and 102 of Crown Production No 3). Subsequently, steps were taken to properly enclose the gaps at both east and west ends of the balcony. The infill was a glazed panel. These works were completed on 4 August 2006 at a cost of £1,249.60 plus VAT.and can be seen in Photographs 98;99;100 and 105 of Crown Prod 3

Louise McCreath was unaware of the existence of the gap. The gaps were to a significant extent obscured from view when the doors leading to and from the offices at either end of the balcony were open. The doors opened against the barrier or towards the barrier. Staff working in Princes Exchange had not remarked on these gaps nor had the gaps registered with management, security or maintenance staff. Mr Douglas Thomson an employee of Reliance Security had noticed the gap in the glazed balcony barrier but had thought nothing more of it.

The gap had not featured in the risk assessment prepared by National Britannia (now Connaught Compliance) nor any of its updates. National Britannia provided health and safety consultancy services to Teesland Management Services Ltd (now Valad Management Services Ltd).

Mark McPhillips (then an architect employed by P.J.M.P Architects) knew of the gaps as he designed the building with such gaps. Those involved in the construction of the building and the balcony balustrade must have known of the gaps (the main contractor was Kvaerner (now Skanska) and the specialist balustrade sub contractor – Charles Henshaw and Sons Ltd). They built the first floor balcony balustrade to the plans and specification provided by the architect. Mr McPhillips continued his association with the Princes Exchange project when he left PJMP. He contracted with Teesland to perform independent site inspections to check upon conformity, workmanship and finishes which he did between September and December 2000

Accordingly several key issues arise from the undisputed facts of the tragic events of 14 February 2006 and surrounding the presence of the gap:-

- Why and how the gap came to exist. This involves consideration of the design and construction of the locus, Princes Exchange and in particular the first floor balcony and its balustrade
- the size of the gap and its significance in terms of causation. Who was "at risk" from the presence of these gaps?
- the knowledge of the duty holders in the building and their evaluation of the risk posed by the gaps. Were the risk assessments "suitable and sufficient"?

Locus of Fatal Accident – Princes Exchange, Earl Grey Street, Edinburgh

The Princes Exchange Building is part of a high quality development of office accommodation. It was designed to be high quality office accommodation capable of sub division with basement car parking. That was the remit and specification given to the designers and architects by the developer "Teesland". The developer appointed Percy Johnston Marshall and Partners (P.J.M.P) (later to become JM Architects) as architects to the project. Further instructions to the architect included the requirement to maximise the footprint – in other words to design for as much rental space as the planning authority would permit.

The building was designed to the developer's requirements. No occupiers/tenants had been identified thus the building was a speculative build in the sense that the developers hoped to attract commercial tenants but at the early stages of planning had not secured these tenants.

Crown productions 3 and 4 are books of photographs showing the Princes Exchange building taken between 14 February 2006 and 27 October 2006. Photograph number 90 is a view of Princes Exchange taken from a position in front of the main entrance.

Mark McPhillips was the principal architect/designer on the Princes Exchange project. He had previously been employed by P.J.M.P as an architect between 1986 and 1988 when he left to work as an architect elsewhere. He returned to P.J.M.P in or around 1997/98 to work on the Princes Exchange project. Other staff at P.J.M.P worked on this project with him.

Brian Thompson was the director in charge of the project at P.J.M.P and Ronald McFarlane is a main board director of P.J.M.P. He was responsible for the financial overview of the project and ensuring that the construction programme was adhered to.

The Building Standards (Scotland) Regulations 1990 and the 4th amendment to the technical standards formed the relevant regulations and technical guidance in force when the Princes Exchange building was designed and built and therefore which governed that development.

Crown production number 69 is an extract from the technical standards (4th amendment).Applicability is determined by reference to the date when the application for building warrant is made. If amendment is subsequently required the same regulations will apply (even though there may have been change or amendment to the building regulations subsequent to the original application for warrant). Usually building warrant remains in existence for three years however that allows work to commence within three years with actual construction potentially lasting much longer than the three year period. Amendment to warrant may be sought at any stage in construction as long as the warrant has not expired. During the entire period of construction and for the purpose of consideration of granting/refusing a completion certificate the original regulations which were in force when the application for Building Warrant was made will govern.

What are building standards regulations?

They stipulate minimum requirements which must be satisfied before a building warrant will be granted and then before a completion certificate will be issued. Put another way the local authority had no power to insist on a higher standard then those stipulated in the building regulations together with the associated technical standards in force at the relevant time. Therefore if plans are designed to meet the requirements of the building regulations then the local authority are bound to issue a building warrant and where appropriate a completion certificate.

The vast majority of building work requires a building warrant although there are exceptions defined by the nature of the building (eg temporary buildings or agricultural buildings) or the nature of work to be undertaken (for example certain minor work is exempt from the requirement for building warrant). The warrant permits building to be carried out in accordance with plans which are lodged with the application for a building warrant. The plans may have had to be amended or altered to meet the requirements of the Building Regulations as interpreted by the Local Authority.

The Building Regulations Scotland 1990 classified buildings by purpose. There were seven categori**es :-**

1. **Dwellings**
2. **Institutional and other residential**
3. **Offices**
4. **Shops and Commercial**
5. **Assembly and Recreational**
6. **Industrial**
7. **Storage and Warehousing**

The Technical Standards 4th amendment (Crown production number 69) flesh out the building regulations and give technical guidance to users. Together they provide the relevant statutory requirements, technical guidance and explanation. Section 3.2 of these technical standards sets out what has become known as the "100 mm rule" it states

"*in a building of purpose group 1 or 5 or purpose group 2A, openings in a protective barrier must be small enough to prevent the passage of a 100 mm diameter sphere ...*".

That rule at the relevant time applied to categories groups 1 and 5 namely "dwellings" and "assembly and recreational. The rule did not apply to group 3" offices" and clearly the Princes Exchange development fell within group 3.

However for the sake of completeness section 3.1 of the technical standards states where a protective barrier must be provided in the following terms "the protective barrier must be provided at -

(a) the edge of every floor, stair, ramp or raised accessible area where there is a difference in level of 600 mm or more; and

(b) the edge of a landing where the route of travel from the adjoining level to the next flight changes direction through 90 degrees; except

(c) where a barrier would be incompatible with normal use such as a loading bay or stage; or

(d) where a wall, partition or fixed glazing at the edge of the floor meets the requirement of section 3.3."

The requirement for such a barrier did apply at Princes Exchange in respect of *inter alia* the first floor balcony and the stairs. Section 3.3 and 3.4 of the technical standards gives the dimensions and other specifications that the barrier must satisfy. The standards were met by the barrier erected on the first floor balcony.

Thus it can be seen that the Princes Exchange development fell into category or group 3 of the classification of buildings under the Building Regulations. Regulation 32(2) of the 1990 regulations related to the provision of protective barriers and the associated sections of the technical standards 3.1, 3.3 and 3.4 applied to the Princes Exchange building but the specific rule relating to openings in the protective barrier namely that they be small enough to prevent the passage of 100mm diameter sphere did not apply to Princes Exchange as Princes Exchange did not fall within purpose group 1, 5 or sub group 2A.

Accordingly that is a brief synopsis of the relevant regulatory requirements which governed Princes Exchange building and in particular the protective barrier required at the first floor balcony.

It is also the backdrop against which the construction of the Princes Exchange building was undertaken.

Construction

The building warrant application is dated 6 February 1998 and was submitted to City of Edinburgh Council. It relates to land adjacent to Earl Grey Street, Edinburgh on which the Princes Exchange building has been built together with the building known as New Uberior House. The applicant for building warrant was New Tollcross Ltd, Forsyth House, Edinburgh. There was evidence that New Tollcross Ltd was a joint venture between Teesland and the Bank of Scotland incorporated for the purpose of the construction and development of the Princes Exchange and New Uberior House enterprise. The application for building warrant and the accompanying plans were submitted by Percy Johnston Marshall and Partners, Architects and signed by the project architect Mark McPhillips. Various plans and drawings required to be submitted along with the application for building warrant. The plan showing the area of interest to the inquiry namely the first floor balcony is drawing number L(4)4061 (Crown production number 6). This shows the locus of Ben's accident but it is of some significance that it does not show any gap between the balustrade and the adjacent wall.

Various staged warrants were granted by City of Edinburgh Council between September 1998 and June 1999 (Crown production number 18).

Following a tendering process, Kvaerner (now Skanska) were appointed as main contractor. There was evidence to the effect that this was a design and build contract. I doubt that there is any significance in the type of contract. I understand that in such a contract the main contractor assumes responsibility for putting the design into build or construction and for carrying out any further design work necessary to complete the building for the clients. This had the effect that the contractors would take on board the architect who had been responsible for the original plans ie Mr McPhillips and the rest of the design team.

There was nothing in the evidence relating to the main contractor that was note worthy. Angus McInnes gave evidence. He had been the project manager with Kvaerner responsible for Princes Exchange. Once the main contractor is appointed in a design and build contract the architect and design team work with the contractor to put into effect the clients' project based on the designs already prepared.

At the stage of construction the presence of children within the proposed office building does not appear to have been raised as an issue by either the clients, the architect or main contractor. In terms of the design and construction the purpose of the project was to build an office development.

The building was constructed as shell and core allowing tenants to fit out the units to suit the particular requirements of their undertaking. Whilst on site the main contractor did certain "internal" work for tenants but as an add on cost invoiced to the tenant.

<u>How the gap through which Ben fell came to exist</u>

The first floor balustrade was produced and installed by a specialist sub contractor Charles Henshaw and Sons Ltd. Design drawings for the various areas of the project were converted into working drawings by the main contractor or sub contractor in consultation with the architect and design team who as noted had become part of the main contractors team once the design and build contract was entered into.

Crown production 8 is a copy of Charles Henshaw's drawing "setting out of main and drum foyer balcony balustrades" (dated 7 February 2000 drawn by S.A.M). That drawing is marked up by hand with altered dimensions and specifications. These markings/revisals together with the gridlines had been added by Mr McPhillips who has initialled the drawing in the lower right quarter adjacent to the east most doors leading from the first floor balcony.

For the purpose of this inquiry into the cause of Ben's death the alterations to the radii of the glass stainless steel fascia together with the "150" measurement at the end of the balcony are of some significance.

Crown production number 7 shows the original plans and elevations of the first floor balcony (Rev B) dated 26 October 1998. Mr McPhillips explained that he had required that there be an increase in the balustrade radius (which is in effect a notional line drawn from a fixed point, known as a "setting out point", in the foyer to a point where the steel and glass balustrade be constructed) (Crown production number 7). He also required that there be an increase to the gap between the end of the balustrade and the wall which is shown as the hatched area at each end of the balustrade in Crown Prod 8. It is very likely that there is a direct correlation between the increase in the radius from the setting out point and the increase in the gap. In the absence of a corresponding increase in the size of the glazed panels of the balustrade the effect of increasing the balustrade radius leads to there being a greater gap between each end of the balustrade and the wall shown hatched in the Plan which is Crown Prod 8.

In design/architectural terms hatching would normally denote a solid structure for example a wall. However the architect had designed that wall to be a glazed fire screen wall or partition wall and not a solid wall. It is therefore misleading to show that wall hatched as it was known not to be a solid construction. This would be known to the architect as he had designed the layout of the first floor balcony.Crown Production 12 shows the design of the firescreen wall.

The specialist sub contractor who manufactured and installed the first floor balcony balustrade was Charles Henshaw and Sons of Edinburgh. Production 8 is the original setting out plan. It shows the architects revisals. Production 9 is the same drawing however revision D, showing that the original drawing has been revised four times (a), (b), (c) and (d) to accommodate *inter alia* the architects requirements. It incorporates the architects handwritten alterations to the radii and the balustrade gap.

On the 5 July 2000 Stewart Muir (S.A.M) of the specialist sub contractor Charles Henshaw wrote to John Murray of the main contractor Kvaerner. He used a form known as a "request for information" (RFI) – (the document is Crown production number 10) and it allows space for the request to be made and also space for the reply. The RFI related to "STRUCTURAL GLASS BALUSTRADES, DRUM AND TOLLCROSS ENTRANCES 1st FLOOR"and referred to revision C of the sub contractor's setting out plan for the balcony (drawing b/0759-01 revision C dated June 2000). The RFI enquired –

"can you please confirm that PJMP Architects want the gap between the end of the glass balustrade & face of walls to be 150 mm. Normally this gap would be a maximum of 100 mm!

We are going to order the curved glass and require this confirmation to establish the glass lengths".

Production number 11 discloses that Mr Muir's RFI was sent immediately by John Murray to PJMP Architects on 6 July apparently by fax. Production number 11 is Kvaerner Construction Ltd technical query sheet reference 4133/340. It attaches the RFI and requests a response by 10 July 2000. Mr Murray adds "the working drawings were sent back with 150 mm marked on them!". By return comes a reply from Mr McPhillips "*gaps to be 150 mm as noted*".

In this exchange Mr Muir appears to refer to the "100 mm rule" so called even though it does not apply to these premises. He adds emphasis by way of an exclamation mark and Mr Murray also adds this emphasis in his covering technical query sheet.

This exchange assumes a degree of significance in the aftermath to Ben's accident. It gave the architect an opportunity to pause and consider whether the 150 gap was required for design and build purposes. It also allowed the architect a final opportunity to consider whether to close that gap by instructing the sub contractors to increase the size of one or of all the glass panels before the sub contractor submitted the order for the curved glass. Mr McPhillips reply is clear and unequivocal and on the basis of that reply the specialist sub contractor prepares the 4th revision (D) to the setting out drawings showing the architects requirements (Crown production number 9).

The clarity of Mr McPhillips response to Henshaw's RFI can be contrasted with his inability to offer any explanation or reason for the increase in the size of the gap far less any good or compelling reason when he gave evidence to the inquiry. Clearly allowance must be given for the passage of time but his failure to articulate any reason for his insistence on increasing the gap was quite extraordinary given that he had principal design responsibility for this project and given that he had time to reflect on why a gap of that size was required given its significance in the tragedy that occurred in Feb 2006.

Stewart Muir appeared to be the only person involved in this construction project to mention the gap and the 100 mm rule. The principal architect could not offer a cogent reason why the gap was increased from 100 mm to 150 mm.

There was a suggestion that the architect wished the balustrade to fit behind a mullion (see drawing which is crown production 8). A mullion has been drawn in on the right side adjacent to the vertical end of balustrade. To accommodate this the radius from the setting out point to the balustrade may have been increased thus resulting in a larger gap between the vertical end of the balustrade and the wall. However Mr McPhillips could not say that this was the reason. The reason might well have been these factors or build ability or a combination of these together with "aesthetics". However there was clear evidence that build- ability tolerances would not have called for such a large gap and that less than 100 mm would have allowed sufficient build-ability tolerance. There was evidence from Mr Lamb of Henshaws; Mr McInnes of the main contractors and indeed from Mr McPhillips himself about that matter.

As the evidence developed so did the size of the gap. The fire screen glazed wall is shown in several photographs in Crown production 3 and production 78. It can be described thus: -The glass panels are held in a frame consisting of mullions (vertical structures) and transoms (horizontal or transverse bars or structures). The glazed panel is recessed in the frame formed by the transoms and mullions as can be seen in the photographs in that same production. The construction of the glazed screen wall formed the bounding wall at each end of the main foyer first floor balcony. Due to the configuration of this glazed wall the setting out dimension would be measured from the vertical edge of the balustrade to the front face of the framing for the glazed wall. That front face would be the transom or horizontal structure. This can be seen in photographs Crown production number 78 and in other photographs in Crown production number 3 for example photographs number 94, 97, 98, 99, 100, 103, 104 and 105. As has been commented on Mr McPhillips knew that the setting out dimension was increased by him from 100 mm to 150 mm.

Photograph production number 78 rather graphically and eloquently shows the "gap" through which Ben passed before falling to his death. Superimposed on that photograph are dimensions which were taken following the accident and which are agreed (see earlier passage on" the tragic events of 14 February 2006").

The photograph gives both colour and meaning to these measurements and study of the photograph show how the 150 mm dimension to the closest transom becomes a gap of 217 to 220 mm from the vertical edge of the balustrade to the glass. The gap of 220 mm exists over a height of just a little more than .6 of a metre (approximately 2 feet in old money).

The significance of the 100 mm sphere guideline for protective barriers and its effect

The building standards set out the minimum requirements to be followed by designers and those involved in the planning and construction of buildings.

Part S of the technical standards for compliance with the Building Standards (Scotland) Regulations 1990 (2006) deals with access to and movement within buildings and protective barriers.

The designer must consider the likely hazards, building use and the risks to building users.

The purpose of the regulations include issues of health and safety and therefore assessment of risk on the part of the designer. Where there is a requirement for a barrier it should be designed so as to minimise the risk of persons falling, rolling, sliding or slipping through gaps in the barrier (BS6180).

The Scottish provisions relating to protective barriers and gaps have been set out above and it is known that the 100 mm rule did not apply to office buildings(purpose group 3) when the Princes Exchange building was designed.

Crown production number 85 is the approved document in terms of the Building Regulations 2000 for England and Wales. Section 3.3 provides that- “where buildings are likely to be used by children under 5 years the guardings should prevent children being held fast by the guarding. The construction should be such that a 100 mm sphere cannot pass through any opening in the guarding and so that children will not readily be able to climb it. Horizontal rails for such guardings should be avoided”.

There is a similar technical handbook for Northern Ireland (crown production 86). In terms of section 4.5 of that handbook it is provided “where a building or part of a building is likely to be used by children under 5 years of age the guarding shall be constructed so that a 100 mm diameter sphere cannot pass through any opening in it other than a triangular opening formed by a tread riser and the bottom edge of the guarding if that bottom edge is not more than 50 mm above the pitch line. The guarding shall also be constructed so that a child can not readily climb up it”.

Accordingly the provisions in England, Wales and Northern Ireland are similar and refer to children under the age of 5.

Since the Princes Exchange building was built the system of building standards has changed in Scotland. The Building (Scotland) Act 2003 and the Building (Scotland) Regulations 2004 (as amended) came into force in May 2005. There was also published in 2005 the Technical Handbook for non domestic buildings which provides the practical guidelines in order to comply with the requirements of the new building regulations. This also came into force on 1 May 2005.

Within that technical handbook section 4.4.2 states "in and around any non domestic building *where the presence of unsupervised children is anticipated*, gaps in any protective barrier should not be large enough to permit a child's head to pass through. To protect against this, openings in a protective barrier should prevent the passage of a 100 mm diameter sphere".

Accordingly the regulations moved away from the classification of use of the building and relate to non domestic buildings "where the presence of unsupervised children is anticipated". In that situation the 100 mm diameter sphere rule should be adhered to.

A further change was made from 1 May 2007 when the term "unsupervised children", in that section was changed to remove the word "unsupervised" referring simply to the presence of children. It is thought that this change was directly connected with Ben's accident.

As has been mentioned changes to the building regulations are not applied retrospectively and the regulations which apply relate to the date when application for building warrant is made.

The 100mm rule applies now to all non domestic buildings where the presence of children is anticipated which obviously could cover offices – and indeed any non-domestic building.

Significance and purpose was given to the rule by the research conducted by the Health and Safety Laboratory in Buxton. In particular, Lee-Ann Stanley conducted research and made an ergonomic assessment. Her report is crown production number 5. She gave evidence during part 1 of the inquiry by which time she was Mrs Lee Ann Hunter. She produced a 100 mm sphere which has been lodged. Her supplementary report in the form of an email is crown production 105.

Mrs Hunter is a Senior Ergonomist with the Health and Safety Laboratory. In conducting the research she used technology – 3D – Jack Modelling Computer Programme. She had available to her Ben's dimensions ie height, weight and importantly his head, chest and hip measurements.

She derived assistance from studies, mainly American, which record anthropometric dimensions of the child population. These indicate that the mean dimensions for 20 to 23 month old males and females were similar to Ben's critical measurements. Mean is taken between the 5^{th} percentile of development (smaller or shorter) and the 95^{th} or other end of the spectrum(larger/taller). Mean head breadth is 12.9 (Ben = 13.2) mean head circumference is 47.8 cm (Ben = 52 cm).

She also considered the data collated for younger children who from the age of 9 months would be able to crawl then walk/stand alone. Beyond the age of 15 months motor skills increase. However the mean head breadth and circumference measurements are the critical measurements. The head cannot be compressed whereas other parts of the body can be twisted and angled through gaps. In children in the age range 9 months to 15 months it is 12.9 cm with children even in the lower percentiles of development exceeding 12 cm or 120 mm. Children younger than 9 months lack the mobility required to access such a gap.

She had access to photographs and dimensions and measurements of the balcony barrier and gap. She had photograph production number 78 with the dimensions superimposed. She accepted these to be accurate. Figure 1 in Miss Stanley's report show these dimensions in a model.

She concludes that Ben would have been able to fit through the gap in the protective barrier with some ease even allowing for him wearing a bulky outdoor jacket. She postulates on the mechanics of how he negotiated the gap in figure 2 – either by standing up straight but turning side on or alternatively by crouching down to avoid the narrower part of the gap (148 mm).

She also adjusted the model to leave a gap of 100 mm at the base but using the same configuration as existed at Princes Exchange, as has been discussed. This still leaves a gap of 170 mm between the end of the barrier and the mullion (figure 3 of report).

She concluded that it was possible for a small child of Ben's age and size to fit through that reduced gap because of the variable gap widths below the barrier rail which had the effect of increasing the gap below 68 cm height. She postulates how the child might have negotiated that gap in figure 4 – by crouching down. By reducing the gap at the base of the barrier in Princes Exchange to 100 mm it made an accident such as befell Ben less likely to happen however a child could still manoeuvre himself through such a gap thus the accident might not have been averted.

The 3rd modelling exercise involved reducing the gap over the entire height of the barrier ie from the floor of the balcony to the top of the barrier. In other words ensuring that the gap was straight and was constantly a maximum of 100 mm. This would have prevented the accident occurring as Ben would not have been able to access through the gap. Furthermore even the smallest child in the 5th percentile of development would not be able to pass through such a gap. Thus the entire population, adult and child, would be excluded had the gap been reduced to 100 mm throughout the height of the barrier.

Thus had the rule which restricts gaps to 100 mm sphere been applied to commercial offices and enforced the gap at Princes Exchange would have been reduced or filled in (as has happened) and the likelihood of any child or adult squeezing through the gap would have been prevented.

However looking at the matter another way would be to consider who was "at risk" from the "gap" as constructed?

Clearly it was a gap which permitted young children of Ben's age and size to pass through. The research conducted by the Health and Safety Laboratory informs me that children up to the age of 4 might be at risk. Children in the age range 3 to 4 would have more difficulty accessing the gap but could manoeuvre themselves through the space particularly if they crouched down where the gap was at its greatest. Much would depend on the size and flexibility of the child. Once children were older than 4 it would be unlikely that an average size child would be able to access the gap although children who could be said to be small for their age (ie the lowest percentile) perhaps could.

No doubt the research explains why the guidance on building standards in England and Wales and Northern Ireland refers to children under the age of 5. In Scotland the reference is simply to "children" with no age specified.

Accordingly the population who could be said to be at risk from a fall as a result of passing through the gap in the barrier as happened to Ben would be children under the age of 5 although there was a risk to children of 5 who were very small for their age.

Whether we take children up to 4 or 5 may not be important when set against the likelihood of young children being present unaccompanied at the locus which were managed commercial offices.

Likelihood of unaccompanied young children within Princes Exchange

There was much inquiry of witnesses on the matter of the presence of children in these offices. That evidence distils down into several clear statements of fact:-

1. The offices are not open to the general public. Public may access the car park in the basement but not the office area. Public may enter by the main front entrance.
2. The first floor balcony is not an area to which the general public have free access.
3. Children of 5 years or younger would not be able to access the building unless accompanied by an adult.
4. The presence of children of any age was occasional. When present they would be accompanied by a parent or other adult. Employees occasionally

brought young children to their place of work. Clients/visitors may occasionally be accompanied by young children.

Without exception all young children who visited Princes Exchange were accompanied by and supervised by a parent or adult guardian.

The evidence regarding the presence of children in the building came from witnesses who worked in Princes Exchange or who had done in the past including tenants, security and maintenance staff.

There was a considerable amount of time devoted to this matter and of course there is a quite separate issue of the witnesses contemplation of who might inhabit or access the building. Some did not consider children at all due to the nature of the development (such as the architect) some did not see children during their visits to the building (witness Reville and Newton).

I will return to this matter when considering the evidence in Part 2

<u>The role of City of Edinburgh Council – City Development- building standards</u>

The role of the Council is to ensure compliance with the relevant building regulations.

The Council require to consider plans and approve if they comply with the relevant building regulations and technical standards. If they do comply the Council must grant a building warrant. Council inspectors or surveyors check the work on the site as construction progresses usually accompanied by someone from the construction team for example a contract manager. The Council surveyors are concerned with compliance with the regulations and not with the quality or finish of the work.

If the construction complies with the Regs and Technical Standards they are bound to issue a completion certificate at the appropriate stage allowing occupation of the building.

Now, since the Building Scotland Act 2003, the 32 local authorities act as *verifiers* in respect of applications for building warrant and completion certificates with the onus transferring to the developer or agent to comply with the regulations and seek verification from the Council - that is the developer submits an application for completion certificate on the basis that he warrants that the construction complies with building regulations and standards and seeks verification or approval through the local authority. The local authority no longer certifies compliance. The developer has complete knowledge of the construction design and build. The local authority cannot have complete knowledge of the project based on infrequent inspections which effectively are snapshots of the project as it develops. As has been noted the application for building warrant in respect of Princes Exchange development was dated 6 February 1998 and was submitted by PJMP on behalf of New Tollcross Ltd. Building warrants were granted in stages between September 1998 and June 1999. John Stevenson a Building Standards Surveyor employed by the Council was responsible for ensuring that the Princes Exchange development complied with the Building Standards Regulations 1990 and accompanying technical standards.

The plan (Crown production number 6) which accompanied the application for building warrant shows the first floor balcony. It does not show any gap between the balustrade of the balcony and the adjacent wall. The wall itself is not shown as a fire screen wall however a glazed fire screen wall was designed and constructed on that floor. In any event the gaps between the balustrade wall as finally constructed did not offend against the building regulations in force.

It was unclear from the evidence led whether Mr Stevenson or any other member of council staff dealing with the building regulations required amendment of drawings or clarification of the drawings relating to the design of the balustrade or the fixing of the balustrade to the wall. Clarification if required would have been sought from the architect.

Mr Stevenson carried out inspections of the Princes Exchange building during the construction phase. Crown production number 21 is a true copy of the record of inspections carried out by City of Edinburgh Council between June 1999 and February 2001. It appears that the Princes Exchange building was all but complete by the end of 2000 however the completion certificate (production number 22) was only issued on 1 March 2001 there being some delay apparently due to industrial action.

The record of inspections by City of Edinburgh Council staff does not record the gap which has been described.

The record of inspection normally records matters which relate to compliance with the building regulations. The inspector, Mr Stevenson, indicated that other matters which were of concern or noteworthy would be recorded. However Mr Stevenson confirmed that he did not notice the gap at the first floor balcony. In any event the design of the balcony balustrade complied with the regulations. Inspectors have no power to require alterations or modifications if the building and design complies with the building regulations. Put another way these officers had powers only to require compliance with the building regulations in force and applicable to the date when the building warrant application is made.

Is further amendment to the Building Standards practicable and desirable ?

I have already referred to fact that the Technical Standards for compliance with the regulations have changed since the Princes Exchange building was completed and now the “100 mm rule”, so called, applies to all buildings in which the presence of children is anticipated. Buildings are no longer categorised by class.

The applicability of the 100 mm rule depends upon the requirement that the qualification “ where the presence of children is anticipated” is met or satisfied. Thus in the interpretation of the regulations there is introduced an element of uncertainty and lack of precision. The evidence led at this inquiry was eloquent of the subjectivity which the qualification introduces..

Mr Stevenson is a very experienced officer and in order to ensure compliance with the current building standards he requires architects to state whether they anticipate children within the premises. He would err in favour of applying the 100 mm rule unless there was something from the architect certifying that no children were anticipated. He considered that there was no good reason not to apply the rule to most if not all premises.

Mr Campbell, a colleague of Mr Stevenson,is a group leader for planning. He is also employed by the City of Edinburgh Council and is a very experienced surveyor. He personally had no input in the Princes Exchange project.

If an architect said that the gap was reasonable he would have to accept that, he stressed that building standards were minimum requirements and not necessarily" best practice".

Mr Campbell tended to agree that, at the relevant time, when dealing with a class 3 building namely offices he would not be considering children to be present.

Now since the technical standards which came into force in 2007 he would always ask an architect to state or certify whether the presence of children was anticipated.

Mr Campbell's own view was that the 100 mm rule should apply to all buildings but that it may not be practicable to make that rule universally applicable in the sense of being retrospective.

Thus the current practice of the building control department of City of Edinburgh Council has much to commend it. Sensibly and understandably officers require the applicant to certify on plans submitted for warrant/verification that the presence of children is not anticipated otherwise their presence will be assumed and the 100 mm will apply.

Mr Scott of the Directorate for the Built Environment doubted that the rule could easily be applied across the board. However the evidence relating to the Building Standards came from the two officers of City of Edinburgh Council Building Control Department who have much operational expertise in the applicability of the standards. Neither considered that there would be any difficulty in applying the rule across the board subject to particular exceptions. That would indeed lead to certainty and more clarity.

It seems entirely appropriate and apt to promote certainty and clarity in the application of building standards. General application of the 100 mm rule would enhance safety. Had the rule applied to offices in 1998 when the application for building warrant for the Princes Exchange development was submitted and had the building complied with such standards the accident to Ben would have been prevented.

I heard evidence on the matter of tolerances required to assist and ensure that buildability was factored into construction plans. None of the witnesses suggested that 100mm was anything other than sufficient to ensure that building tolerances were accommodated.

JM Architects now apply the "100mm Rule " in all projects even in face of protest from clients. They have done so since Ben's accident. They have encountered some dissent from clients but insist on applying that rule for safety reasons .They and other architects consider that it is both practicable and prudent to do so. I commend that practice.

Even supervised children are at risk where the gap is greater than 100 mm throughout the height or length. Ben's accident happened and another could occur unless consideration is given to having universal application of the 100 mm sphere. This would exclude all children and therefore all adults and prevent a similar accident and reduce the risk of becoming trapped. That such a rule would exclude the entire population is certain and would have the effect of reducing the risk of another accident happening however small that risk may be.

It is therefore recommended that the 100 mm rule be the default standard subject to there being exceptional circumstances where the purpose and design of the building allowed relaxation of that standard to be permitted. The designer or applicant would require to show that such circumstances existed to justify a relaxation being considered and that health and safety had been assessed and the safety of occupiers, visitors and public would not be compromised by a deviation from the rule. In effect there would require to exist compelling design reasons why a larger gap was necessary together with a certificate to the effect that it is not anticipated that children would be present.

Retrospectivity of requirements under the Building Regulations

Section 25(1) of the Building (Scotland) Act 2003 which came into force in May 2005 gives power to the Scottish Ministers to apply the building regulations retrospectively.

In 2008 that power was exercised in relation to energy performance certificates requiring that existing buildings become subject to subsequent or later regulations which required that an energy performance certificate in respect of those premises be obtained .

That however was the extent of the requirement there being no further requirement to act upon or modify premises in the light of the certificate or any comments relating to the certificate.

The evidence relating to the building regulations came principally from Mr Scott of the Directorate of the Built Environment and two surveyors from Edinburgh City Council Building Control Department. It was suggested that to apply the 100 mm sphere retrospectively to existing buildings would not be practicable and would involve a disproportionately high cost to those responsible for existing buildings across the range of age, type etc. Some properties may not be amenable to modification

The issue was closely associated to the assessment of the risk posed by buildings which may not comply with the rule.

In these circumstances I cannot recommend that universal application of the "100mm Rule "should be retrospective. It should be effected prospectively.

Management of Princes Exchange

Princes Exchange was completed in 2001. The granting of the completion certificate allowed occupation of the building. It achieved the Developers' purpose namely the construction of a high quality office development. There is a basement car park which due to planning requirements is partly a public car park however members of the public cannot access the Princes Exchange building directly from the car park.

During construction phase the Crown Estates Commissioners purchased the entire site. The detail of the various transactions is set out comprehensively in Crown production number 89, an affidavit by Alan Menzies of Messrs Anderson Strathern, Solicitors (Solicitor to the Crown Estates Commissioners).

I will summarise the transactions:-

The Crown Estates Commissioners let the entire development including Princes Exchange to the Governor and Company of the Bank of Scotland (later to become HBOS) furthermore, a separate agreement was entered into between the Crown Estates Commissioners and the Bank who are to exercise the management and maintenance functions and obligations in respect of the common areas on behalf of the heritable proprietors (Crown Estates).

Accordingly, the Bank held the leases to all parts of the development including the car park and assume the heritable proprietors' obligations vis a vis the common areas.

The Bank appointed Teesland Property Management Services Ltd (now Valad Management Services Ltd) to manage the property. The Bank also operates from part of the development (New Uberior House) and are tenants on 2 floors of Princes Exchange.

There is a close association between HBOS and Teesland who manage properties on behalf of the Bank throughout the country.

The property managers for Princes Exchange were Tim Prime (1997 to 2003) and David Broome (2003 to present).

Tim Prime is a surveyor employed by HBOS who was seconded to Teesland.

David Broome is a facilities manager with Valad Property Group. He remains the property manager for Princes Exchange.

The role of the property manager is to undertake all property management functions – to ensure that all contracts were in place post construction for example security maintenance etc; to allocate costs equitably amongst the occupiers of the building and to undertake all health and safety obligations on behalf of the Bank.

The property manager is not based in the building but would visit when required more frequently to begin with and latterly approximately once a week reducing to once a month.

The management network relating to the development was complex. Although the Crown Estates Commissioners had leased the entire development to HBOS in 9 separate leases and entered into an agreement with HBOS re management they retained an interest in ensuring that the bank were performing their obligations in terms of the lease and management agreement by which the Crown Estates Commissioners had delegated their own obligations and responsibilities to the bank who had in turn outsourced these responsibilities to Teesland (now Valad). The Crown Estates Commissioners retain Hillier Parker to manage and oversee their property interests. Accordingly meetings took place between Hillier Parker and HBOS/Teesland relating to Princes Exchange. Hillier Parker who are a well known company specialising in property management use National Britannia (now Connaught Compliance) to undertake risk assessment in buildings they manage for clients including the Crown Estates Commissioners. This led Tim Prime (by now seconded to Teesland) to contract with National Britannia to undertake health and safety and fire risk assessments of the common areas in respect of the bank'sc (and therefore Teesland's)responsibilities and duties as landlords under the Health and Safety at Work legislation.

Teesland required to have in place suitable health and safety arrangements and to have and maintain risk assessments in accordance with the provisions of the Management of Health and Safety at Work Regulations 1999. They required to ensure that they appoint a competent person to assist in that regard.

The approved code of practice supporting the Management of Health and Safety at Work Regulations 1999 states:-

> *"Employers are solely responsible for ensuring that those they appoint to assist them with health and safety measures are competent to carry out tasks they are assigned and given adequate information and support. In making decisions on who to appoint, employers themselves need to know and understand the work involved, the principles of risk assessment and prevention, and current legislation on health and safety standards. Employers should ensure that anyone they appoint is capable of applying the above to whatever task they are assigned".*

Other contracts relating to the building which have relevance and which were spoken to at the inquiry include –

- Reliance Security Services who provide security and reception services at Princes Exchange
- OCS – provide cleaning services
- Car park management was provided by NCP
- Fire protection by ADT
- Schindler provide lift maintenance services
- Facilities maintenance was provided by a succession of companies McAlpines, Stiels and G S Hall

Security, maintenance and cleaning staff had a presence in the building.

Reliance Security

Reliance provided security and reception services at Princes Exchange. They required to have a presence 24 hours a day 7 days a week. They had a contract with the Bank of Scotland and as part of their contractual duties they required to "politely greet tenants and visitors to the building and direct them to the relevant floor. There is no checking in required with the exception of contractors working in the building on the landlord's request".

They required to permit tenants access out with normal office hours subject to there being a weekend log and identification being produced.

They were to be the eyes and ears of the managing agents and liaise with all of the tenants, patrol the building etc.

Three employees or former employees of Reliance gave evidence Douglas Thomson, William Johnston and Jacqueline Chraszcz.

They described their duties and with particular regard to reception duties. They explained that tenants' staff did not require to report to reception except at weekends or out of hours when they would sign a staff register kept at the main door reception. The reception desk was manned at all times. Staff would normally come and go without the need for any involvement by security staff. Often staff would access their offices direct from the car park there being no requirement to pass reception.

Visitors did not require to sign or log in and out. Security staff were available to greet and direct them to the appropriate floor/office usually via the lift. Reliance staff did not require either to escort visitors to the tenant's office or announce their arrival. Each office within the building had its own reception staffed by their own employees.

The witnesses confirmed that children could be in the building periodically. There might be a variety of ages. Younger children including babies and toddlers would be accompanied by an adult who was usually a staff member or visiting client.

There may have been older unaccompanied children who walked into the building to meet an employee often a parent. Most would wait at the main reception area. There was no written policy relating to children on the premises prior to Ben's accident.

Since Ben's accident changes were introduced for people bringing children into the building.

The building managers, Valad, introduced a child safety policy for children visiting the premises. That policy is crown production number 50 – dated July 2007. The accompanying parent/guardian had to sign the policy.

The prime advice was not to bring children on to the site however if it was necessary to bring children then only under strict supervision by an adult. Indeed no child under sixteen would be permitted unless accompanied by an adult.

Their policy involved the tenants policing and enforcing the policy otherwise access to the building might be refused.

The fundamental requirement was –

- Parents/guardians must provide strict and close supervision of all children on site, at all times during their visit.

This is an important, fundamental and obvious safeguard to which I will return.

If security staff noticed any defects or hazards they would report to building management – Teesland (later Valad). Alternatively they could speak direct to the maintenance staff on site or cleaners depending on the nature of the problem.

Reliance staff attended tenants meetings where issues relating to the building were discussed. The building manager would also attend together with the maintenance contractor. No issue regarding children arose prior to Ben's accident.

Maintenance and Cleaning

There was evidence that OCS were the cleaning contractors for Princes Exchange but no evidence was led from a member of the cleaners' staff and no issue arises from that.

The maintenance engineers have changed over the years since the building opened. David Ross gave evidence. He has been a consistent presence since shortly after Princes Exchange opened. He is based permanently in the building. Currently the maintenance company is George S Hall but the contract has been with a number of companies including Stiell and McAlpines.

Mr Ross was the facilities engineer with McAlpine's when the accident occurred. His duties have remained the same or consistent with the age of the building. He operates a planned maintenance programme and also deals with problems as they arise (reactive).

He would deal with any maintenance issues raised at tenants meetings.He would meet with the building manager at least monthly. The building manager would attend at the premises roughly on a weekly basis.

He was not aware of the gaps on the first floor balcony and no issue with the gap was raised until after Ben's accident.

He was aware of children in the building from time to time including his own. This was not a regular occurrence.

He was aware of the risk assessments prepared by National Britannia but could not recall being involved with National Britannia personnel when they were present at the building carrying out the risk assessment. He accepted that it was more likely than not that he may have had some dealings with the risk assessors when they attended the locus to undertake their site assessment if the building manager was not available.

<u>Tenants</u>

Since completion of the Princes Exchange building in late 2000 there has been constant occupation of the various floors with the exception of the east wing of the 1st and 2nd floors.

The tenants of the entire 3rd, 4th and 5th floors have been Solicitors. Turcan Connell, a private client firm have occupied the entire 4th and 5th floors since December 2000. The east wing of the 1st floor was occupied by Ledingham Chalmers, Solicitors between March 2003 and June 2006 when they vacated. Messrs Turcan Connell have occupied that area in addition to the 4th and 5th floors since 1 July 2006. Turcan Connell are principally a private client firm of Solicitors in the sense that they provide legal services to individuals from cradle to grave.

The 3rd floor together with the west wing of the 2nd floor have been occupied by McGrigors LLP, another legal practice providing a wide range of legal services to corporate and commercial clients.

Other tenants include a financial consulting firm; computer support services and the Bank of Scotland who as at February 2006 occupied the ground floor and had leased but were not in occupation of the west wing of the 1st floor.

Each of the tenants have duties and responsibilities in respect of health and safety for their own workplace and overlapping or concurrent responsibility with the property managers in respect of the shared common and access areas.

Staff and clients of Ledingham Chalmers and Turcan Connell were permitted to bring children into the office. It would be difficult to refuse if clients wished to bring children to meetings.

The nature of the business was such that each firm had individual clients . Indeed the focus of Turcan Connell's business was private clients.

Witnesses employed by tenants or formerly employed by tenants acknowledge that it was part of office life that employees or former employees would bring children into the office. A common situation is when a young mother brings a baby to the office for her colleagues to admire and dandle. It is also not uncommon for there to be an older sibling, often a toddler, in tow also.

This is a situation that seems to be acknowledged by HBOS in their own child policy (crown production number 80) formalised following Ben's accident.

No issue relating to children was raised by tenant's representatives at the regular tenants meetings prior to Ben's accident.

Risk Assessment

It was clear from the evidence relating to the ownership, management, services and occupation of a modern office development that a complex network, indeed a kaleidoscope, of interests have to interact and cohabit. Each of course has distinct duties and obligations which may stand alone but which may also impact on others.

Ultimately, the landlord has paramount responsibility for the office development and common areas. In Princes Exchange this responsibility was delegated to managing agents Teesland (now Valad Management).

The landlord, and therefore their managing agents, have duties and obligations under the Health and Safety at Work Act 1974 (HSWA) as indeed have the other constituents within Princes Exchange.

The landlord and their managing agents Teesland/Valad have the prime responsibility for the building and its common parts. The evidence regarding the chain of responsibility clearly indicated that Teesland/Valad assumed the landlord's duties and obligations by virtue of the management contract with HBOS.

It therefore falls to Teesland to fulfil these duties which include the performing of a "risk assessment" in terms of the Management of Health and Safety Work Regulations (MHSWR) 1999.

Regulation 7 of the MHSWR 1999 provides:-

> 7. – Health and safety assistance
>
> (1) Every employer shall, subject to paragraphs (6) and (7), appoint one or more competent persons to assist him in undertaking the measures he needs to take to comply with the requirements and prohibitions imposed upon him by or under the relevant statutory provisions […].
>
> (2) Where an employer appoints persons in accordance with paragraph (1), he shall make arrangements for ensuring adequate co-operation between them.

(3) The employer shall ensure that the number of persons appointed under paragraph (1), the time available for them to fulfil their functions and the means at their disposal are adequate having regard to the size of his undertaking, the risks to which his employees are exposed and the distribution of those risks throughout the undertaking.

(4) The employer shall ensure that -

(a) any person appointed by him in accordance with paragraph (1) who is not in his employment –

(i) is informed of the factors known by him to affect, or suspected by him of affecting, the health and safety of any other person who may be affected by the conduct of his undertaking, and

(ii) has access to the information referred to in regulation 10; and

(b) any person appointed by him in accordance with paragraph (1) is given such information about any person working in his undertaking who is -

(i) employed by him under a fixed-term contract of employment, or

(ii) employed in an employment business,

as is necessary to enable that person properly to carry out the function specified in that paragraph.

(5) A person shall be regarded as competent for the purposes of paragraphs (1) and (8) where he has sufficient training and experience or knowledge and other qualities to enable him properly to assist in undertaking the measures referred to in paragraph (1).

(6) Paragraph (1) shall not apply to a self-employed employer who is not in partnership with any other person where he has sufficient training and experience or knowledge and other qualities properly to undertake the measures referred to in that paragraph himself.

(7) Paragraph (1) shall not apply to individuals who are employers and who are together carrying on business in partnership where at least one of the individuals concerned has sufficient training and experience or knowledge and other qualities –

(a) properly to undertake the measures he needs to take to comply with the requirements and prohibitions imposed upon him by or under the relevant statutory provisions; and

(b) properly to assist his fellow partners in undertaking the measures they need to take to comply with the requirements and prohibitions imposed upon them by or under the relevant statutory provisions.

(8) Where there is a competent person in the employer's employment, that person shall be appointed for the purposes of paragraph (1) in preference to a competent person not in his employment […].

Sub paragraphs (4) and (5) are of particular relevance given that it is known that Teesland contracted with National Britannia Ltd to provide assistance and the risk assessment which requires to be "suitable and sufficient" in terms of regulation 3.

The approved code of practice published by the Health and Safety Executive to assist in the interpretation and application of the regulations provides such guidance at paragraph 46. This has been set out above at page 31.

Accordingly it is not possible for Teesland to delegate those obligations under the MHSWR as they are required to have a working knowledge of the principals of risk assessment and prevention and the health and safety legislation.

Furthermore with reference to regulation 7(8) there is a requirement for the appointment of a competent person in the employment of the employer in preference to a third party not in that employment.

Mr Sylvester Evans refers to this in his report and also when he gave evidence. He confirms that the "competent person" should ideally be an employee of the duty holder. "But where the expertise does not exist in- house then the employer must select an external person to provide the required assistance" (report 4.4.7).

Then at 4.6.2 "this preference is because it is better to have specialist assistance immediately at hand, within the company, to advise on day to day issues, the implementation of preventative measures and controls etc as they arise".

Accordingly the relationship between the duty holder and an external independent risk assessor is quite complex.

It is important that the duty holder provides complete information to the risk assessor regarding the activities carried on in the building and the nature and characteristics of the building and the activities carried on within the building.

The Health and Safety Executive publish a leaflet "Office wise". I am told by Mr Sylvester Evans that the document makes no reference to or reminder of the need to consider children in a risk assessment for an office.

On the relationship between the duty holder and the independent risk assessor Mr Sylvester Evans in his report likens the annual inspection conducted by the independent risk assessor to an MOT (report at 6.3.2) -"in the case of Princes Exchange, the independent risk assessor is only on site for one day a year for the annual inspection. The advantage of an independent check of the risks is that a fresh eye can spot existing hazards and risks which have developed and are being tolerated. However, in many ways it is similar to an MOT and it requires the duty holder to maintain and operate the car properly throughout the year".

The approved code of practice does give assistance with regard to what constitutes a suitable and sufficient risk assessment. The guidance highlights the 5 stages of risk assessment which ought to be adopted as follows:

1. Identifying the hazards
2. Identifying who might be harmed and how
3. Evaluating the risks from the identified hazards
4. Recording the significant findings including (a) a record of preventative and protective measures in place to control the risks (b) the actions needed to reduce the risks significantly and (c) proof that a suitable and sufficient assessment has been made
5. Reviewing and updating the assessment and making sure it remains valid

(5 steps to risk assessment – HSE)

There was some evidence relating to the question of how much the risk assessor should rely upon the information provided by the duty holder and how much probing the risk assessor should do. Mr Sylvester Evans deals with this at paragraph 6.3.4 "the question of how much probing should the risk assessor do? In my experience after discussing and agreeing the scope and basis for the work and the details of the facilities involved, the risk assessor is entitled to proceed based on instructions and information provided by the client (duty holder). However, the risk assessor must maintain an open mind. Indeed, a sense of "curiosity and imagination" are traits I would expect to find in a reasonably competent risk assessor".

Princes Exchange risk assessment

Tim Prime, Property Manager for the building engaged NBL to assist him by undertaking a risk assessment.

Tim Prime received initial training from NBL on their system and on his duties. The National Britannia HAScheck system would deal with the health and safety requirement and methodical compliance with that system ought to provide the property manager with the procedures he should adopt in complying with his obligations. The HAScheck system comprised a 2 part manual (crown production 35). Manual 1 – comprised sections 1 - introduction; users guide; health and safety policy and responsibilities of the property manager and Section 2 included the risk assessment and health and safety action reports.

Manual 2 comprised sections 3 and 4- section 3 being work procedures and safe working practices and section 4 being the site managers training. Section 5 listed various performance measurements and monitoring compliance with the system. Section 6 addressed recording of documents.

NBL would undertake a risk assessment which would be reviewed annually.

Michael Newton of NBL conducted the initial audit or site inspection on 27 February 2001. He was accompanied by the property manager Tim Prime.

The initial audit led to the system manual being delivered to Teesland the following month (March 2001).

Subsequent review and training in May 2001 to September 2001 indicated that the system was being implemented well by Mr Prime.

No mention is made of the "gap" at each end of the 1st floor balcony.

Michael Newton conducted the subsequent annual reviews 2002, 2003 and 2004.

The risk assessment process is repeated during these annual reviews and they summarise what is in effect the existing action plans and identify any new areas for action.

The 2005 review was conducted by Joanne Cameron or Reville, an employee of NBL. She was new to the site and was accompanied in part by Mr Ross, the maintenance engineer. By 2005 David Broome was the property manager but he was not on site during the review.

The annual review in 2005 raised issues or concerns particularly relating to the gap at the landings in the main core 2 staircase but did not mention the 1st floor balcony gap. The concerns related to the main core 2 staircase involved gaps which may constitute a risk of tripping or falling for adults using the staircase especially during an evacuation.

The 5th review was conducted by Michael Newton in January 2006. This was the last review prior to Ben's accident.

This review did not discuss or follow up the risk of "falls from stairways or landings" raised by his colleague the previous year.

Accordingly none of the reviews/risk assessments mentioned the gap at the 1st floor balcony.

National Britannia Ltd and the issue of children in the office.

Property managers Tim Prime and David Broome did not discuss the issue of children being present in the building with National Britannia.

Mr Broome did not appear to have given the matter any significant thought and he was not present when the annual reviews were carried out by NBL. He had not seen any children in the building. He had neither noticed the gap nor had the issue of the gap been raised with him.

Mr Prime had no discussion with NBL regarding the presence of children in the building. He does not recall being asked by NBL about that matter. He did not notice the gap was there nor did he recall any issue arising relating to the children or the gap.

Had Mr Prime been asked about children he would have said that he had never seen children in the building and if he had considered the nature of the building and its tenants would never have anticipated unsupervised young children within the building.

The evidence of the risk assessors on the matter of children was less clear.

Mr Newton confirmed that there was no discussion about children. He considered it to be an adult office environment and would not have expected children to be an issue at all. He was unaware that new mothers might from time to time bring babies into an office where they worked or had previously worked to show off their offspring. He had not contemplated that clients attending the office might from time to time require to bring children with them.

Joanne Reville thought that she would have asked about children being present but would not have expected unsupervised children in a office. She has expertise in dealing with retail developments where the presence of children is mostly certainly an issue.

Neither of the risk assessors saw children on the premises during their visits.

Although it may be proper to suggest that good practice might demand that the risk assessors ought to have been more inquisitive, Mr Sylvester Evans deals with this matter in his report at 6.3.4 and specifically on the matter of children at 6.4.6.

> *"Should the NBL risk assessors have sought further independent verification as to whether unsupervised young children entered and were present occasionally in the building or not; for example by talking with the security guards on duty or the tenants? In my opinion, I would not expect a reasonable competent risk assessor to do this unless some additional facts highlighted the presence of children. Such facts might be hearing that a tenant had, or was planning to have a crèche facility or children's play area; observing children, a buggy or say sticky finger marks; reading of periodic complaints of noise from unruly children within the building. In which event, I would expect the risk assessor to question the client's basis and reconsider whether any new hazards and risks required to be examined. In the absence of such facts I would not expect the risk assessor to talk to all the security guards or contractors on duty specifically about the potential presence of children in the building supervised or unsupervised. In my opinion, this is seeking perfection and is unwarranted and impracticable. It is overly-burdensome on the risk assessor given the commercial use of the premises."*

He concludes that NBL took all reasonable measures to establish whether children, who could be particularly exposed to hazards, were present in Princes Exchange.

Crucially, the answer to an examination of instances of children being present in the building would have confirmed that no unsupervised young children were ever in the building. Only on occasion would young children ever be present and then they would be accompanied and therefore supervised by a parent or adult guardian.

Unsupervised children not having access to the building the gaps at the first floor level did not present as a hazard for older children or adults who did inhabit the building.

The risk assessment having been prepared on the basis of the nature and purpose of the building ie commercial offices, the risk assessors were entitled to exclude unsupervised young children as a risk group.

Mr Sylvester Evans deals with the impact had unsupervised children been known to be present. Report (6.5).

Had it been known that unsupervised young children were on the premises then the risk assessment would not have been suitable or sufficient. Indeed if unsupervised children were on the premises then further preventative measures would have been necessary and these are listed in his report at 6.5.3.

In these circumstances changes/modifications would have been required not only to this building but to many. In these circumstances the risk assessment would not have been either suitable or sufficient in terms of the legislation.

He tells us that an office is not a benign environment for young children and concludes

> *"An office is not a benign environment. A young child will be exposed to similar risks to those that exist in a residential property where no special precautions have been made to reduce the risks of injury to young children. The issue is then one of close supervision to control the risk of injury.*
>
> *In my opinion the NBL risk assessment was 'suitable' and 'sufficient' on the basis that no unsupervised young children were expected to be present on the first floor balcony of Princes Exchange".*

Having regard to the evidence led at the inquiry regarding the occasional presence of accompanied children in the office I accept and adopt his conclusion..

<u>Section 6(1)(e) Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976</u>
<u>Consideration of recommendations arising from the facts relevant to the circumstances of Ben McCreath's death</u>.

The facts arising from the evidence led at the inquiry have caused me to consider certain matters relating to part 1 of the inquiry namely –

The building standards and the application of the 100 mm rule.

Although the 100 mm rule did not apply to this development evidence was led regarding the rule; its application and the modifications to the legislations since 1998 and since Ben's accident.

I have dealt with this matter at some length above and in view of the undisputed evidence that the accident would have been avoided had the rule applied to this building consideration should be given to reviewing the Building Standards Regulations with regard to that rule. Since 1 May 2007, and substantially as a result of the tragedy which befell Ben, the 100 mm rule applies to all buildings in which "the presence of children is anticipated".

I commend the practice of J M Architects who now apply this rule whether or not the presence of children is anticipated. The qualification is not only subjective but it is now almost impossible to gauge with any certainty how the presence of children can be assessed. The facts established at this inquiry reflect a changing working environment where employees may require to take children to their workplace or indeed choose to do so. Visitors and clients may similarly require or choose to be accompanied by their children or grandchildren.

The evidence of course pointed to young children being accompanied and therefore supervised when in this office . This is likely to be the situation in most if not all offices. However the lesson of this tragedy is that even supervised children are at risk when gaps of greater than 100mm exist whereas all children and therefore all adults are protected if the gap is restricted to a maximum of 100mm.

The uncertainty built into the current building standards is unwelcome. It is desirable to have a measure which is both clear and unequivocal and it will have the effect of protecting the smallest and most vulnerable in our society.

However it has to be practicable and able to be put into operation. I heard evidence that architects already have adopted the practice of applying the rule. The local authority verifiers have no difficulty in applying the rule and indeed would welcome the certainty that it would introduce .I also heard that the application of the rule would not adversely impinge on practical construction and build issues.

I therefore recommend that the 100 mm rule should be applied to all buildings. That should be the default setting and designers/architects/developers would require to show exceptional circumstances to allow any relaxation to that rule.

I make no recommendation as to its application retrospectively as I can make no such recommendation. I heard little evidence on retrospectivity other than it would have considerable practical consequences for property owners/landlords and indeed tenants and far reaching cost implications which would have to be assessed and evaluated. Countless office premises and commercial premises would be affected and this may cause disproportionate cost for what is a very small risk.

Alteration to the rule in Scotland would lead to a deviation in practice compared to the rest of the UK. Some may consider that to be a good thing and some may prefer a degree of uniformity of approach. Consultation and evaluation of the responses may prove informative. The guidance on the application of building standards is however not the same in Scotland as in England and Wales and Northern Ireland at the present time and therefore there is already a degree of disconformity.

It would be proper to allow the opportunity for an architect or designer to advocate a case that there might be exceptional circumstances to permit a deviation from the rules.

Consideration of other recommendations

In part 2 of the inquiry Mr Sylvester-Evans heard most of the evidence led and gave opinion evidence based on his immense experience of safety matters. His opinion was not challenged. No other expert testimony was led on part 2.

He was invited to consider possible recommendations relating to issues raised at this inquiry these included –

1. Safety Management aspects of multi occupancy commercial offices
2. Assessment of the risks to young children in commercial offices and arising from any assessment which may be conducted – whether guidance should be provided for duty holder risk assessments?

His supplemental note is crown production 107.

<u>Safety management aspects of multi occupancy commercial offices</u>

He suggests no specific recommendations in relation to the safety management aspects of multi occupancy commercial offices. :-

"In my opinion the 'Management of Health and Safety at Work Regulations 1999'Approved Code of Practice and Guidance (ref 1) does address adequately the issues with respect to multi – occupancy offices. In particular regulation 11 of the MHSWR 1999 addresses the need for co-operation and co-ordination of duty holders who share a workplace".

The evidence relating to the management of Princes Exchange suggested that this was not a matter on which recommendations are required. There was a clear appreciation of the respective duties and obligations on the part of the landlords, managers, agents, tenants and contractors. There was communication and co-operation. Regular meetings occurred with tenants representatives. There was no lack of communication or co-operation.

I propose to make no recommendation on this matter. I do set out for information the suggestions made by Mr Sylvester Evans in crown production 107 paragraphs 3 and 4 below.

"3. However, I observe that there is the potential for confusion in the application of the MHSWR 1999 with regard to identifying who is responsible for the management and control of health and safety of common areas of multi-occupancy commercial offices. Such confusion might arise where the landlord/managing agent has no presence on site and rely on facility and security contractors to manage the common areas. This may result in a lack of communication and effective co-operation with the other ‘dutyholders’ (tenants).

4. In my opinion, it is best to remove any such confusion and to ensure that the ‘dutyholders’ in terms of the HSWA 1974 and its enabling Regulations are clearly identified and know the extent of their responsibilities. With these responsibilities and duties clearly known and accepted by all relevant parties, then there can be no confusion as to who has ‘ownership’ of these duties. Consideration should be given to the production of a Memorandum of Understanding or similar agreement between all ‘dutyholders’ in particular to cover the interface issues.”

Good practice may lead to consideration being given to adopting a memorandum of understanding or minute of agreement as suggested by Mr Sylvester Evans.

<u>Evaluation of the assessment of the risks to young children in commercial offices</u>

According to Mr Sylvester Evans the risk of serious or fatal injury to young children in offices has been very small indeed. However, it has been suggested that I consider making a recommendation that the Health and Safety Executive (HSE) in conjunction with local authorities commission an assessment of that risk; whether the risk is increasing or decreasing and whether the current risks are considered “broadly acceptable” or not.

Once the result of such an assessment is known further consideration should be given to the provision of information reminding dutyholders of the need to have in mind the likelihood of young children being present in a commercial office when conducting its risk assessment.

Further , depending on the outcome of the assessment ,guidance could be provided to dutyholders when considering these risks.

Suggestions have been made by Mr Sylvester Evans as to what the essence of the guidance might be. This is set out in paragraph 7 of crown production 107.

I was urged by the Crown to adopt and recommend that a fuller evaluation of the risks to young children be undertaken and whether that was an increasing or decreasing risk. No other party sought such a recommendation.

I had the benefit of Mr Sylvester Evans' evidence regarding the historic risk to children in offices. This is indeed very small.

There was no evidence led at the inquiry to suggest that there was a trend leading to an increase in that risk. There was evidence that the occasional presence of children in offices where staff were visitors might now be more common . That is a relative matter. Work colleagues bringing babies to an office is not a recent phenomenon albeit that it may be more common place now than prior to the introduction of the Health and Safety at Work Act 1974. There was no evidence that supervised young children were routinely in offices but that their presence was infrequent. In other words this was not a very recent development but had been happening for some time.

The evidence pointed to this being a discreet tragedy rather than a worrying trend towards children becoming injured when visiting a parent's place of work.

There was therefore no cogent evidence or argument in favour of making a formal recommendation leading to the commissioning of research into the incidents of children having serious injury or fatal injury in the office setting.

Mr Sylvester Evans was asked by the Procurator Fiscal depute to consider and suggest possible recommendations arising from the evidence which this Inquiry heard . He suggested that consideration be given to having such an assessment of risk to young children and also made very helpful suggestions as to what Guidance might be given when risk assessments are conducted. He has made proposals as to what that guidance might be and that is available to those having an interest in these matters for example the Health and Safety Executive, local authorities and the body known as LACORS (Local Authority Co-ordinators of Regulatory Services). They may wish to commission such research as would determine accurately whether there is an increasing or decreasing trend and in the light of such work consider whether guidance is required. There is no reason why the Health and Safety Executive should not consider providing information on its website to remind dutyholders of the need to consider the likelihood of young children being present in a commercial office when conducting its risk assessment. This is a matter for the Health and Safety Executive/LACORS to judge. I do not propose to make any formal recommendation on this matter.

Conclusion

A tragic accident occurred on 14 February 2006 resulting in little Ben McCreath's death.

The accident occurred when he was with his mother at her office in the Princes Exchange Building, Earl Grey Street, Tollcross, Edinburgh. Ben was able to squeeze through a gap between the balcony balustrade and the fire-screen wall which formed the end of the balcony. Having achieved that there was nothing to prevent Ben falling some distance onto the ground floor below. His resulting head injuries proved fatal.

The gap through which Ben squeezed was greater than 100 mm because the building standards regulations permitted such a gap in the office development. The architect who designed the building planned for the gap to be where it was and the size it was. Indeed he increased the gap from the original plan but could not give me a reason far less a good reason why the gap was increased. The result was a gap of 220 mm width over a height of just over 2 feet.

The Technical Standards (4th amendment) are to be read with the Building Standards (Scotland) Regulations 1990. They were the relevant regulations and technical standards and guidance at the time the Princes Exchange Building was constructed. The Princes Exchange development complied with these building standards.

The 100 mm rule stipulated in section 3.2 of the Technical Standards did not apply to the development as section 3.2 did not then apply to purpose group 3 (offices).

Research conducted by an experienced ergonomist at the Health and Safety Laboratory confirmed that Ben would have been able to fit through the gap quite comfortably even if he had been wearing a bulky winter jacket. The same ergonomist gave evidence based on anthropometric data that had the barrier been reduced to 100 mm throughout its height then the whole population including all children would be unable to access that gap in the barrier and would therefore be protected. That evidence was not challenged and indeed it is agreed that the conclusions in the ergonomist's report are correct.

From the 1 May 2005 a new system of Building Standards came into force in terms of the Building (Scotland) Act 2003 and the Building (Scotland) Regulations 2004 (as amended).

Amongst other things it provides that "every building must be designed and constructed in such a way that every sudden change of level that is accessible in, or around, the building is guarded by the provision of the pedestrian protective barriers." (schedule 5, 4.4).

The 2005 Technical Handbook for non domestic buildings provides practical guidance for compliance with the requirements of the building regulations. This also came into force on 1 May 2005.

It states in section 4.4.2 – "in and around any non domestic buildings where **the presence of unsupervised children is anticipated**, gaps in any protective barrier should not be large enough to permit a child's head to pass through. To protect against this, openings in a protective barrier should prevent the passage of a 100 mm diameter sphere".

Following Ben's accident there has been an update to the Technical Standards Handbook for non domestic buildings which came into force in May 2007. Section 4.4.2 has now been amended to delete reference to" unsupervised" children and simply refers to non- domestic buildings "where the presence of children is anticipated".

In other words the 100 mm rule applies in and around non domestic buildings where the presence of children in anticipated.

The equivalent standards in England and Wales and Northern Ireland apply the 100 mm rule where a building, buildings or part of a building is likely to be used by children under 5 years of age.

Following Ben's accident the barrier through which Ben fell and the gaps were altered to enclose these gaps at each end. This work was completed on 4 August 2006 and cost £1,249.60 plus VAT.

I have made a recommendation that consideration be given in the light of the evidence led at this inquiry that the 100 mm rule should be applied to all non- domestic buildings without the qualification "where the presence of children is anticipated". This would lead to conformity and certainty in new developments and safety would be enhanced. Architects and designers may apply for a relaxation of the rule only if exceptional circumstances exist to permit a larger gap. Although the risk of injury to children in offices is reported to be very small indeed the unchallenged research evidence showed that the application of the 100 mm rule would protect the entire population including small children from the risk of injury or death where there was a change of level protected by pedestrian protective barriers.

The Princes Exchange office development is part of a larger commercial development. HBOS leased the entire development from the Crown Estate Commissioners and were therefore the landlords. They contracted the Teesland (now Valad Management Services Ltd) who became their managing agents and property managers. Other contracts were entered into for the provision of security services; maintenance services, cleaning and lift maintenance amongst other services.

The landlords, managing agents, contractors and tenants all have duties and obligations under the Health and Safety at Work Act 1974 in respect of the premises, employees and persons using or accessing the building. The landlord has prime responsibility for the premises as he is in control of the premises. In this instance HBOS has contracted with Teesland who appear to have assumed the landlord's responsibilities, duties and obligations under the HSWA 1974. Concurrently tenants and contractors have duties and obligations under the Act. However the landlord, therefore Teesland, have prime responsibility for the common areas of the building. There will be overlap in the landlord and tenants duties under the Act.

In discharging their obligations under the Act and the MHSWR 1999, Teesland contracted with NBL to provide specialist health and safety assistance; perform risk assessments and train Teesland staff in the use of the safety management system known as the HAS Check Active Health and Safety Management System. The prime responsibility for the management and control of the building and the health and safety obligations remain with Teesland and the involvement of NBL as Safety Consultants does not derogate from these duties and obligations on the part of Teesland. NBL however offered expertise in safety matters and they not only undertook health and safety risk assessments but provided advice and training to Teesland and their property managers so that they could perform their obligations.

NBL (now Connaught Compliance) provided training, risk assessment and updated training. The evidence indicated that Teesland's property manager Tim Prime was diligent in his approach to his health and safety duties and training on the HAS Check Active System.

Michael Newton and Joanne Reville of NBL provided annual risk assessments. Neither mentioned or seemed aware of the gap through which Ben squeezed.

As the ergonomist's evidence demonstrates the gap is a risk to young children of around age 5 and under.

Following detailed evidence at this inquiry it is clear that Princes Exchange is a managed commercial office. The public did not have unrestricted access to the building, certainly not beyond the reception/security desk. The only children present would be children of tenants' employees, tenants' clients, visitors or perhaps contractors. Their presence was infrequent. Older children who could walk into the building independently would usually wait at reception for the parent or adult they were visiting. There was <u>no</u> evidence to suggest that unaccompanied young children could or did ever access the building. That would be extraordinary. The evidence was to the effect that young children might be brought into the building on occasion but always accompanied by a parent or adult.

Neither Teesland property managers nor the NBL employees when undertaking the risk assessment had in contemplation young children being in the office area. None had seen young children in the office with adults as this was an occasional and not a regular occurrence. Children being present was not on the radar of the architect who designed the building nor were children in the contemplation of the property managers Teesland who therefore did not raise the issue of children with the employees of NBL who undertook the risk assessment. It is likely that Joanne Reville asked about children but would not have been alerted to any issue relating to children. Michael Newton did not have children in his contemplation in dealing with the risk assessment. The property manager did not mention children to NBL employees. There was no evidence of children visiting the building when the NBL employees were there. Had these NBL employees engaged in a detailed forensic examination of the facts as was possible throughout this lengthy inquiry the outcome would have been the same namely that no unaccompanied unsupervised young children would have access to the building and in particular the first floor balcony. These are the facts. However the risk assessors only require to take reasonable steps to establish who was at risk and therefore who was likely to be present in the building. I derived considerable assistance in assessing the sufficiency and suitability of the risk assessment from the opinion of Mr Sylvester Evans an expert in safety management, safety systems and risk assessment of almost unassailable knowledge and experience .

As the gap was solely a hazard to young children it follows that the absence of any reference to the gap in the risk assessment did not constitute a defect in the risk assessment . In the view of Mr Sylvester Evans the risk assessment satisfied the requirement of MHSWR 1999 regulation 3 which requires "(1) every employer shall make a suitable and sufficient assessment of :- (a) the risks to the health and safety of his employees to which they are exposed whilst they are at work; (b) the risk to the health and safety of persons not in his employment arising out of or in connection with the conduct by him and his undertaking”

It follows that unsupervised young children were not a relevant risk group to which the dutyholders and those contracted to conduct the risk assessment should have had regard to. The risk assessment required to be suitable and sufficient for the locus and undertaking.

Essentially, however, the gap about which much evidence was led and was undoubtedly what allowed Ben to fall was not considered a hazard by NBL due to the nature and occupation of the building. It hardly registered. The gap at the landing of the core 2 staircase registered with Joanne Reville not because it was a hazard to children but because it was potential hazard to adults evacuating the building.

If the gap did not register with the professional risk assessors nor the property managers nor the architect and construction team nor the many people who pass through the building and balcony every day who did it register it with? Possibly Mr Thomson of Reliance who had noticed it; and certainly the embryonic gap registered with Mr Muir of Charles Henshaw & sons who sounded a note of warning at the construction phase. He asked a question in his request for information and it was answered by the architect who confirmed he wished to have the larger gap.

It was therefore easy to understand why the gap had not been noticed by Louise McCreath or her colleagues.

This leads to the crux of the matter.

As Mr Sylvester Evans states in his report at 5.2.3- “an office is not a benign environment. A young child will be exposed to similar risks to those that exist in a residential property when no special precautions have been made to reduce the risks of injury to very young children. The issue is then one of close supervision to control the risk of injury.”

Examples were given of the hazards in offices – doors opening onto children due to lack of visibility; tilting windows; stairs and gaps in stair treads; door hinges constituting a trapping hazard for young children quite apart from the electrical hazards within offices.

Young children visiting offices are accompanied by a parent or other adult. That parent or adult is the prime source of safety control and supervision. It is beyond argument that parents have responsibility and a duty of care for their children. They are the individuals who have the responsibility to act in their child's best interests. When parents bring children into an adult environment such as an office they have the prime responsibility for their safety. That responsibility is non delegable even if others have a concurrent duty and responsibility for those on the premises or affected by their undertaking. The home is a familiar environment for children but not free from hazards for example stairs, windows, cookers, kettles etc. There the parent or guardian is usually the sole safety control and monitor to protect the child from the risk of harm. The responsibility is ongoing and constant especially when children are young and mobile. The requirement is then for close parental supervision.

Accordingly it is reasonable to expect that young children will be properly supervised by a responsible adult. In this case Ben was with his mother. Louise McCreath could not have been expected to be aware of the hazard presented by the gap even if she had noticed the gap at all. She was unaware of the presence of the gap.

Sadly the reality is that small children make it their business to run away from and escape a parent even when supervision is very close. The fact that Ben ran away does not infer that his mother's supervision was lacking or lax. Children pull away, wriggle and explore. Louise McCreath was in a familiar environment. She, along with the rest of the Princes Exchange community, were unaware of the gap. She would be aware of the entrance to the lift lobby and stairs being a potential hazard but Ben was nowhere near that area. No criticism of Louise McCreath's supervision of Ben is made or implied. This was a terrible tragic accident and my deepest sympathies are conveyed to Ross and Louise McCreath, Ben's parents and other friends and family affected by Ben's death.

Regrettably there are many hazards awaiting young children from the obvious, such as traffic on the roads, swimming pools and steep drops and to the less obvious such as windows, blinds , electricity, the seaside and animals.

This has been a sad and distressing case not only for Ben's parents but for all involved in the inquiry. The circumstances of his death have had an impact already on the technical requirements and standards for protective barriers implemented since May 2007. It is my recommendation that these standards be revisited yet again and that consideration be given to removing the qualification "where the presence of children is anticipated" thus requiring the 100 mm rule to be applied across the board. This would lead to certainty, it would reduce subjectivity. Provision can be made for exceptions to the rule but only if exceptional circumstances exist which would justify such a relaxation . It is now known that had the rule applied when the Princes Exchange was designed this accident would have been prevented.

I make no specific recommendations to relating to the matters raised in Mr Sylvester Evans supplementary note (crown production 107). However I commend the note to interested parties for their consideration .