

**BRISTOL CITY COUNCIL**

**CABINET**

**21 July 2011**

**Report of:** Strategic Director, City Development

**Title:** Report on the Structural Appraisal of Trenchard St MSCP and Options for Repairs and Future Life Care Plan

**Ward:** Cabot

**Officer Presenting Report:** David Bunting, Group Manager Parking Services

**Contact Telephone Number:** (0117) 377 3501

**RECOMMENDATION**

1. That structural repairs and a life care plan for Trenchard St MSCP are undertaken to provide a 10 year period as recommended in the Blue Sky Consultancy report.
2. That expenditure of £1,064,475 is approved to repair the car park in order to provide an additional 10 years operational life. The cost of the repairs to Trenchard Street car park are funded by prudential borrowing of £815,475, together with available reserves of £250,000. The prudential borrowing will be repaid by an annual contribution from Parking Services revenue account. Parking Services currently transfers around £83,000 each year into a ring fenced account to fund repairs to its car parks, this figure will be increased to cover the cost of the prudential loan.
3. That a Construction (Design & Management) Consultant is tendered and appointed to draft the tender document and to co-ordinate the project.
4. That a further structural appraisal is undertaken of the car park in 5 years after completion of the proposed repairs to ascertain if any further repairs are required to extend the life of the car park beyond the 10 year period.

## Summary

Trenchard St Multi-Storey Car Park (MSCP) was designed and constructed in the mid-1960s with an anticipated life span of 30 years. The car park was constructed based on standards and codes in practice in the 1950s.

Knowledge of material specifications and how open structures such as Trenchard would be kept in service was limited at the time.

Concerns were raised in the summer of 2009 after inspections by the Head of Building Control and structural engineers from Highway Asset

Management. It became clear from preliminary inspections that the structure of the car park had deteriorated in several locations, which raised serious health and safety concerns. In particular spalling material falling from external cladding, soffits and the pedestrian walkway on Level 8. The immediate health and safety issues were addressed with loose material removed from spalling structures and the walkway closed to the public pending future repair or replacement.

As a result of these concerns, Parking Services in conjunction with Engineering Consultancy, appointed Blue Sky Consultants to undertake a structural appraisal of the car park and provide a costed schedule of repairs required to extend its life by either 10 or 20 years.

Given the current difficult economic circumstances the most appropriate and economic way forward at this point in time appears to be to undertake the recommended repairs and initiate a life care plan for the 10-year period. The 10-year option would require a total spend of approximately £1,325,475, which consists of £1,064,475 in repairs and £261,000 in annual maintenance compared to £6,449,981, which consists of £4,825,981 in repairs and £1,624,000 in annual maintenance for 20 years, a difference of £5,124,506. A further full structural survey could be undertaken in 5 years time when a reappraisal of the situation could be made.

Trenchard St MSCP is a very important car park located in the centre of the city and ideally situated for key institutions and businesses such as the Colston Hall, The Hippodrome and Bristol Royal Infirmary. The car park is a key element of the city's parking and travel policy providing leisure and short term parking to visitors to the city. The car park generates around £2m in parking income per year for the Council.

## **The significant issues in the report are:**

The Sky Consultancy report is long and detailed. A summary of the findings and key recommendations in the report are as follows:

- The car park has been constructed of materials and workmanship that are highly variable and sub-standard. This has adversely affected the durability of the car park and has resulted in the premature deteriora

tion of the main structural elements of the car park. The concrete in the car park is deeply carbonated which has reduced its ability to protect the steel reinforcement from further corrosion. Combined with high moisture levels and calcium content, the existing structures and its previous years repairs are failing. Corrosion is currently still active which will result in further pot holing and spalling of surfaces and external concrete cladding.

- The walkway on Level 8 is in an advanced state of decay and corrosion is still on going. The walkway has been closed to members of the public as a precaution and it is recommended that sacrificial anodes or metal corrosion inhibitors are incorporated in the repairs.
- The rate of deterioration in the concrete has accelerated in recent years and in the opinion of the surveyor has gone past the point where it can be stopped. However, the rate of deterioration can be slowed down to provide a further 20 years operation. Cathodic or Migrating Corrosion Inhibitor (MCI) would need to be used but in both cases the cost will be high and it is questionable whether the cost of using these methods would be worthwhile. It is probably more cost effective to repair the structure with a view to replacing the car park within in 10 years time with a new structure. The new structure would have a 50 year life span. The estimated cost to totally rebuild the car park is between £12m and £16m.

## **Policy**

1.The continued operation of Trenchard St MSCP supports elements of the The Joint Local Transport Plan and the Parking Strategy by providing car parking that supports the local economy and institutions thereby enhancing the vitality of the city.

## **Consultation**

2.**Internal:** Not applicable

3.**External:** Not applicable

## **4. Context**

- 4.1** Trenchard St MSCP was designed and constructed in the mid-1960s with an anticipated life span of 30 years. The car park was constructed based on standards and codes in practice in the 1950s. Knowledge of material specifications and how open structures such as Trenchard would be kept in service was limited at the time.
- 4.2** Trenchard St MSCP is a very important car park located in the centre and ideally situated for key institutions and businesses such as the The Colston Hall, The Hippodrome and the Bristol Royal Infirmary and Children's Hospital. The car park is a key element of the city's parking and travel policy providing leisure and short term parking to visitors to the city. The car park generates around £2m in parking income per year.
- 4.3.** Concerns were raised in the summer of 2009 after inspections by the Head of Building Control and structural engineers from Highway Asset Management that there was serious health and safety concerns regarding the structure of the car park. It became clear from preliminary inspections that the structure of the car park had deteriorated in several locations which raised serious, in particular spalling material falling from external cladding, soffits and the pedestrian walkway on Level The immediate health and safety concerns were addressed with loose material being removed from spallings structures and the walkway being closed to the public pending future repair or replacement.
- 4.4.** As a result, Parking Services in conjunction with Engineering Consultancy, appointed Blue Sky Consultants to undertake a structural appraisal of the car park and provide a costed schedule of repairs required to extend the life of the car park by either 10 or 20 years.
- 4.5.** Blue Sky Consultancy surveyed the car park and produced their report in August 2010. A summary of the reports findings and recommendations are as follows:
- 4.6.** The car park has been constructed of materials and workmanship that are highly variable and sub-standard. This has adversely affected the durability of the car park and this has resulted in the premature deterioration of the main structural elements of the car park.
- 4.7.** The concrete in the car park is deeply carbonated which has reduced its ability to protect the steel reinforcement from further corrosion. Combined with high moisture levels and calcium content, the existing structure and its previous repairs are failing. Corrosion is currently still active which will result in further pot holes forming and the spalling of surfaces and external concrete cladding.

- 4.8.** The walkway on Level 8 of the car park accessing Park Row is in an advanced state of decay and the corrosion is on going. The walkway has been closed to as a precaution and it is has been recommended that sacrificial anodes or migrating corrosion inhibitor are incorporated in any repair.
- 4.9.** The rate of deterioration in the concrete in the car park has accelerated in recent years. It is the opinion of the consultant that the deterioration has gone past the point where it can be stopped. However, the rate of deterioration can be slowed down to provide a further 20 years of life for the car park. Cathodic or migrating corrosion inhibitor would need to be used. In both cases the cost would be high and it is questionable whether the cost of using these methods would be worthwhile. It would probably be more cost effective to repair the structure with a view to replacing the car park within 10 years with a new car park. A new car park would be expected to have a 50 years life span. The estimated cost of rebuilding the car park is between £12m and £16m.
- 4.10.** Blue Sky Consultancy were asked as part of their brief to provide a costed schedule of repairs required to extend the car parks life by either 10 or 20 years.

## **Proposal**

- 5. 1.** Blue Sky Consultants provided two options to extend the useful life of Trenchard Street MSCP by either 10 or 20 years. The importance of Trenchard St MSCP to the local economy and transport policy is clearly understood. The key decision is which of the options is the most economical at this point in time. Currently Trenchard Street car park generates approximately net income of £1.7 million to the Council. The car park actually generates £2.1 million in revenue but annual maintenance and running costs are currently around £319,000. The annual maintenance and running cost figure of £319,000 consists of primarily NNDR rates, electricity, gas, waste disposal, cleaning and response maintenance costs. These figures will not fall as a result of the repairs being undertaken.
- 5.2.** The total estimated cost of repairing and maintaining Trenchard Street MSCP for 10 years is approximately £1,325,475, which consists of £1,064,475 in repairs and £261,000 annual maintenance. The total estimated cost for 20 years is approximately £6,449,981, which consists of £4,825,981 in repairs and £1,624,000 in annual maintenance. The 10-year annual maintenance figure of £261,000 is the total estimated annual maintenance required and will be funded out of Parking Service annual planned maintenance – further details on page 4 of Appendix 1.

- 5.3.** Details of repairs for this option are detailed in Appendix 1. It should be noted that it is no longer proposed to install the “mesh guarding to the parapets” (at a cost of £98,280) as detailed in the Repair and Refurbishment Schedule. The mesh is an anti-suicide measure and is not required to maintain the structure or extend the life of the car park. The above costs also include an additional cost of surveying and repairing 3 of the columns (see below).
- 5.4.** The structural survey recommended further investigation of the 34 columns in the car park to assess if the works undertaken in 2002 had been completed. Further research established that the concrete repairs were completed on the 34 as specified. However, it has been established that 3 of the columns need further survey work and possible repairs. It is estimated that the survey and works will cost repairs at a cost of £20,000. (This is included in the £1,064,475).
- 5.5.** Health and safety inspections have identified a need to install new nosings to the stairwells of the car park at a cost of £27,500. These have been added to the £5000, figure identified in the original survey, giving a revised figure for “repair render to staircore beams and stairwell nosings of £32,500. (This figure is included in the £1,064,475).
- 5.6.** The original Blue Sky estimate for a 10 year repair and refurbishment requirement for the car park was £1,115,255. To this we have added the £20,000 for the repairs to the columns and £27,500 for the new nosings. We have however removed the £98,280 cost for mesh guarding, giving a revised total requirement of £1,064,475.
- 5.7.** It is proposed to undertake the recommended repairs and initiate a life care plan to extend the life of the car park for a further 10 years, since it offers the greatest value for money. Extending the car park’s life for 10 years would require a total expenditure of approximately £1,325,475, compared to £6,449,981 for 20 years. It is also proposed that a further full structural survey is undertaken 5 years after the completion of the repairs. An appraisal can be made then to see if the repairs to the concrete have arrested the deterioration and whether the car park has any potential further life beyond the 10 years.
- 5.8.** It is proposed to fund the structural repairs from the Parking Services Car Park Renewal Account, using £250,000 from reserves and £814,475 funded from prudential borrowing repaid over a 10 years period with 5.5% interest. The total repayable is £1,080,550, (see appendix 3 for Project Costs).

## Other Options Considered

### 6.1 Do nothing

This option was not considered as Trenchard St MSCP is a valuable parking asset and important to the local economy and transport policy of the Council. The closure of the car park would only be considered if there were serious structural failures that indicate that the car park was either unsafe or uneconomical to maintain and this is not currently the case. Not undertaking any repairs to the car park is likely to result in further spalling of concrete as parts of the car parks structure deteriorate, with a real risk of injuries to customers and staff. If this were to happen it is likely to lead to areas of the car park being closed which would result in a loss of reputation and income. It could also result in possible highly expensive legal claims for compensation.

If a serious incident were to occur then in all probability the whole car park would have to be closed and the Council would lose parking revenue of around £40,000 per week. The survey has been completed by a highly qualified respected structural engineer, who has recommended a course of action that will extend the life of the car park by a further 10 years. But these repairs need to be commenced as soon as possible and have to be carried out in full in order to extend the car parks life by the 10 year period. Continuing a patching exercise up the car park is not a serious option and will only increase the high risk of a serious health and safety incident and will not slow down the accelerating deterioration of the car parks structure.

### 6.2 Repair Structure and Provide Additional 20 Years of Life

This option recommends that approximately £4,826,000 is required for repair using greater protection to the concrete structure in conjunction with a 20 year life care plan. It is estimated that the cost of maintenance for the 20 years life car plan will be approximately £1,624,000. As with 10 years option, the annual costs in the life car plan would be funded from the annual planned maintenance in the Parking Services budget. Details of repairs for this option are also detailed in Appendix 2.

## Risk Assessment

7.1 The cost of repair and on going maintenance costs are best estimations at this point in time. The full structural survey has been completed by a highly qualified surveyor recognised nationally as an expert in the field of concrete car park structures and their maintenance so it is accepted that the costs quoted for the works in the reports are reasonably accurate. The quote includes a contingency a £25k contingency sum.

**7.2** The ongoing estimated cost of maintenance for the 10 year life plan (£261k funded from annual planned maintenance in the Parking Services annual budget) should cover ongoing problems, but as with any aging asset there is always a possibility that other unforeseen problems may arise and further funding may be required. The car park is however an extremely important asset to the Council that needs to be maintained and kept operational for the immediate future for the reasons provided in this report. A copy of the Risk Assessment appears in Appendix 4.

## **Public Sector Equality Duties**

- 8a) Before making a decision, section 149 Equality Act 2010 requires that each decision-maker considers the need to promote equality for persons with the following “protected characteristics”: age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation. Each decision-maker must, therefore, have due regard to the need to:
- i) Eliminate discrimination, harassment, victimisation and any other conduct prohibited under the Equality Act 2010.
  - ii) Advance equality of opportunity between persons who share a relevant protected characteristic and those who do not share it. This involves having due regard, in particular, to the need to --
    - remove or minimise disadvantage suffered by persons who share a relevant protected characteristic;
    - take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of people who do not share it (in relation to disabled people, this includes, in particular, steps to take account of disabled persons' disabilities);
    - encourage persons who share a protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.
  - iii) Foster good relations between persons who share a relevant protected characteristic and those who do not share it. This involves having due regard, in particular, to the need to –
    - tackle prejudice; and
    - promote understanding.
- 8b) A screening Equality Impact Assessment has been completed and the public sector duties have been considered during this process. As this is to undertake essential structural repairs this potentially could affect all individuals who wish to use the car park and should therefore not disproportionately have an effect on equality groups.



A full Equality Impact Assessment has not been completed due to the fact that customers will still be able to use the car park and provision will be made if for example specific parking areas are affected by the work being undertaken.

### **Environmental checklist.**

- 9.1 The significant impacts of the proposed repairs are that new materials will be required to undertake the works (concrete and a small amount of steel. The repair works will generate waste material and dust from removal of concrete in need of repair and water used in the building works that will be contaminated from the concrete manufacturing and the control of dust. Power tools will be required to remove concrete prior to facilitate the repairs that will generate noise and dust.
- 9.2 The proposals include the following measures to mitigate the impacts: the tender process will ensure that the successful contractor will be required to comply with relevant legislation and work practices to ensure as much waste material is recycled, that dust and contaminated water run off is contained and disposed of appropriately. The contractor will register the site with the Considerate Constructors Scheme and must achieve a Certificate of Performance Beyond Compliance, as defined by the scheme. Contractors will be instructed to work during the weekday e.g. 08.00 and 18.00. Weekend working will be avoided if possible unless there are exceptional circumstances. Parking Services will be appointing a CDM Co-ordinator to draft the full specification for the structural repairs and manage the project on site to ensure that the contractor complies with the council's requirements. Contractors as part of the tender process will be required to produce method statements and risk assessments.
- 9.3 The net effects of the proposals are on balance potentially negative but mitigation will reduce these effects as practicably possible. A copy of the Environmental Checklist appears in Appendix 6).

### **Legal and Resource Implications**

#### **Legal:**

With regards the proposal to put the Construction (Design & Management) Consultant out to tender to assist with the delivery of the proposals, this will obviously need to be undertaken in manner that ensures the City Council's interests. Depending on the value of the contract, the relevant officers will need to ensure compliance with any relevant procurement provisions, including financial regulations and standing orders. Detailed legal advice should be sought in connection with the process and the letting of the contract at the appropriate stage.

**Legal advice given by:** P Malarby, Senior Solicitor, Legal Services

## **Financial:**

### **Revenue:**

It is not anticipated that the refurbish works will materially impact on the current levels of parking income.

The repayment of the Prudential borrowing over 10 years, amounting to £108,055 per annum, will be met from car parking income

### **Capital:**

The proposal to secure a further 10 years of operational life from the car park by a refurbishment spend of £1.1m will generate the continuance car parking income of around £2m per annum.

The refurbishment cost of £1.1m is an estimate based on figures provided by a qualified surveyor and includes a contingency provision of £25,000 (represents 2% of project costs). Although this figure represents a very low percentage of the total project cost, the individual figures quoted in the estimate (Appendix 3) have been confirmed as prudent estimations by the surveyors.

The costs will be funded by £250,000 of available parking reserves with the balance of £814,475 provided by prudential borrowing to repaid over a 10 year period at an interest rate of 5.5%

**Financial advice given by:** Mike Harding, Finance Business Partner, Neighbourhoods and City Development

### **Land:**

The repair of Trenchard MSCP is recognised as not being a long-term solution as it is already beyond its original envisaged life. Whilst it might be possible to extend its economic life by a further 10 years, opportunities to re-provide the resource in whole or in part, should be investigated alongside the decision regarding the nature of the proposed repair work.

Parking Services and Corporate Property officers met with UNITE on 5<sup>th</sup> July 2011, who are the owners of the ice rink, adjoining student accommodation and the Academy venue to discuss their plans for future expansion. UNITE stated that they planned to submit a planning application to refurbish the ice rink and Academy venue to provide additional student accommodation. UNITE do not currently wish to include the Trenchard St car park site in any of their proposals.

**Land advice given by:** Jeremy Screen, Corporate Property Manager .

## **Personnel**

Not applicable

### **Appendices:**

**Appendix 1** - 10 Year Repair and Refurbishment Costs

**Appendix 2** - 20 Year Repair and Refurbishment Costs

**Appendix 3** - Project Costs

**Appendix 4** – Risk Assessment

**Appendix 5** – Equalities Impact Assessment

**Appendix 6** - Environmental Checklist

## **LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985**

### **Background Papers:**

“Structural Appraisal of Trenchard Street Multi-Storey Car Park”, July 2010,  
Blue Sky Consultants

“Life-Care Plan for Trenchard Street Multi- Storey Car Park”, August 2010,  
Blue Sky Consultants

# Appendix 1: 10 Year Repair and Refurbishment



## REPAIR AND REFURBISHMENT

### TRENCHARD STREET MSCP

#### BRISTOL

#### TEN YEAR REPAIR (07/08/10)

#### Budget Estimate No. 1

Preliminaries		195,000.00
Structural Concrete Repairs		249,000.00
Cathodic Protection		50,000.00
Anti-carbonation Treatment/Decorations		289,900.00
Masonry repairs		5,000.00
Joinery Repairs		20,425.00
Deck Coatings		2,750.00
Barriers and Rails		
Vehicle Impact Barriers	56,100.00	
Mesh Guarding to Parapets	<u>98,280.00</u>	154,380.00
Drainage		24,500.00
Replacement Movement Joints		69,300.00
Repair Render to Staircore Beams		<u>5,000.00</u>
		1,065,255.00
Professional Fees		<u>50,000.00</u>
	<b>TOTALS</b>	<b>£ 1,115,255.00</b>

## Scope of Works

The costs are based on the following scope of works. The scope of works is based on:-

- Blue Sky drawings 8092/30 – 42, 101 – 107 and SK02
- Blue Sky letter dated 30 July, 2010
- Blue Sky E-mail 9 August, 2010

ELEMENT	SCOPE
1. Preliminaries	General site set-up and management. Preliminaries include allowance for all high level access and temporary propping.
2. Structural Repairs	<p>The completion of extensive concrete repairs to the decks, soffits, external parapets, pedestrian walkway, and link bridge as shown on Blue Sky drawings 8092/30 - 42. A contingency allowance has been made for extra repairs which are to be expected upon commencement.</p> <p>The utilisation of MCI's, sacrificial anodes and cathodic protection have generally been discounted for the 10 year repair (with the exception of item 3 below and the use of anodes to the pedestrian walkway) and included in the 20 year repair.</p>
3. Cathodic Protection	Cathodic protection to the external parapets. Cathodic protection has been included to slow deterioration and remove the need to re-erect expensive access during the 10 year lifecycle to undertake further repairs.
4. Anti-Carbonation Coatings	Application of anti-carbonation coatings to all exposed concrete surfaces, including the external parapets.
5. Masonry Repairs	Sundry brickwork repairs and repointing.
6. Joinery Repairs	Minor remedial works to existing joinery and ironmongery which appears to be in a relatively good condition.
7. Deck Coatings	Application of lightweight deck coating membrane to the pedestrian walkway to provide long term protection and slow the rate of deterioration. The coating to provide a 10 year guarantee.
8. Barriers and Rails	<p>Installation of retro-fit vehicle impact barriers to sensitive areas of the structure as shown on Blue Sky drawings 8092/30 – 42.</p> <p>Installation of mesh protection to parapets as shown on Blue Sky drawing 8092/SK02</p>
9. Drainage	Overhaul of all internal drainage installations, including the installation of additional gullies to alleviate ponding.
10. Movement Joints	Replacement of movement joints throughout the property. Full extent to be established.
11. Professional Fees	Engineers, QS and CDMC fees.

### **Basis of Costs**

1. The costs exclude VAT.
2. The costs have been forecast to 1<sup>st</sup> ¼ 2011.
3. The costs are based on information and scope of works provided by Blue Sky intended to form basis of a 10 year lifecycle repair solution. Major on-going works deemed necessary over the 10 year lifecycle are costed in the separate 10 year lifecycle capital investment schedule.

The costs are generally based on approximate quantities taken from drawings provided by Blue Sky. No site visit or site visit/measurement has been undertaken.

4. No allowance has been made within the above costs for the following but for which optional costs are provided as follows:-
  - signage installations £32,000.00
  - parking equipment installations £150,000.00
  - CCTV installations £35,000.00 (entry/exits and payment coverage)
  - lighting and electrical installations £350,000.00
  - lift installations (Park Row lifts only) £200,000.00

The inclusion and timing of these works will be dependant on commercial considerations and/or the existing condition of the assets given the proposed lifecycle of the property. Their inclusion or exclusion would also need to be considered in relation to the separate 10 year lifecycle capital investment schedule.

5. No allowance has been made for the refurbishment of the existing offices, accommodation, W.C's and the like.



# TRENCHARD STREET MSCP

## 10 Year Life Cycle Capital Investment/Maintenance Programme

Item of Structure /Services	Frequency 'Years'	1	2	3	4	5	6	7	8	9	10
		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ICE Appraisal / Condition Surveys	-					8,500					
Structural Repairs	1	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Relining	-					6,000					
Joinery Repairs	-					10,000					
Intermediate Deck Coatings	2		5,000		5,000		5,000		5,000		5,000
Redecoration	-										
Drainage	-					5,000					
Mechanical & Electrical	-										
Relamping	-								6,500		

	1	2	3	4	5	6	7	8	9	10
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Running Totals:	20,000	25,000	20,000	25,000	49,500	25,000	20,000	31,500	20,000	25,000

Envisaged Life Cycle Maintenance Cost 10 years: 261,000

Initial Issue - 7 August, 2010

### NOTES

1. The costs are based on present day price levels and no allowance for inflation has been made.
2. The costs should be read in conjunction with the 10 Year Repair budget costs.
3. No allowance has been made for the following, which is deemed to be outside of the scope of a structural repair costing exercise:-
  - parking equipment installations and maintenance
  - CCTV installations and maintenance
  - refurbishment of welfare facilities and WC's etc.
  - general reactive maintenance
  - statutory PPM, inspections and testing
  - lift installations and testing

# Appendix 2: 20 Year Repair and Refurbishment



## REPAIR AND REFURBISHMENT

### TRENCHARD STREET MSCP

#### BRISTOL

#### TWENTY YEAR REPAIR (07/08/10)

#### Budget Estimate No. 1

Preliminaries		455,000.00
Structural Concrete Repairs		249,000.00
Cathodic Protection		1,250,000.00
Anti-carbonation Treatment/Decorations		289,900.00
Masonry repairs		5,000.00
Joinery Repairs		20,425.00
Deck Coatings		937,936.00
Barriers and Rails		
Vehicle Impact Barriers	56,100.00	
Pedestrian Railings	<u>98,280.00</u>	154,380.00
Drainage		24,500.00
Replacement Movement Joints		69,300.00
Repair Render to Staircore Beams		5,000.00
Elevation Treatments		<u>1,195,540.00</u>
		4,655,981.00
Professional Fees		<u>170,000.00</u>
	<b>TOTALS</b>	<b><u>£ 4,825,981.00</u></b>



## Scope of Works

The costs are based on the following scope of works. The scope of works is based on:-

- Blue Sky drawings 8092/30 – 42, 101 – 107 and SK02
- Blue Sky letter dated 30 July, 2010
- Blue Sky E-mail 9 August, 2010

ELEMENT	SCOPE
1. Preliminaries	General site set-up and management. Preliminaries include allowance for all high level access and temporary propping.
2. Structural Repairs	<p>The completion of extensive concrete repairs to the decks, soffits, external parapets, pedestrian walkway, and link bridge as shown on Blue Sky drawings 8092/30 - 42. A contingency allowance has been made for extra repairs which are to be expected upon commencement.</p> <p>The repair solution is based upon the installation of cathodic protection (see item 3 below) and sacrificial anodes to the pedestrian walkway.</p>
3. Cathodic Protection	<p>Cathodic protection to the decks to slow the rate of deterioration.</p> <p>No allowance for cathodic protection has been allowed for the external parapets on the basis that they are to be removed (item 13 below). If the elevation works are not to be undertaken, the cost of cathodic protection will increase by £50,000.00 to include the parapets.</p> <p>As an alternative to cathodic protection, the installation of MCI's could be considered. An optional cost for this is identified in note 6 below.</p>
4. Anti-Carbonation Coatings	Application of anti-carbonation coatings to all exposed concrete surfaces, including the external parapets.
5. Masonry Repairs	Sundry brickwork repairs and repointing.
6. Joinery Repairs	Minor remedial works to existing joinery and ironmongery which appears to be in a relatively good condition.
7. Deck Coatings	<p>Application of lightweight deck coating membrane to the pedestrian walkway to provide long term protection and slow the rate of deterioration. The coating to provide a 10 year guarantee.</p> <p>Removal and replacement of existing coatings to the decks.</p>
8. Barriers and Rails	<p>Installation of retro-fit vehicle impact barriers to sensitive areas of the structure as shown on Blue Sky drawings 8092/30 – 42.</p> <p>Installation of mesh protection to parapets similar to that shown on Blue Sky drawing 8092/SK02 (see 13 below).</p>

9. Drainage	Overhaul of all internal drainage installations, including the installation of additional gullies to alleviate ponding.
10. Movement Joints	Replacement of movement joints throughout the property. Full extent to be established.
11. Elevation Treatments	<p>Removal of existing parapet cladding and the installation of feature louvres and grillage.</p> <p>It is assumed that the installation of the new perimeter cladding will not remove the need for mesh protection. An alternative design may however be required.</p> <p>Consideration was given to the installation of more elaborate treatments such as rainscreen cladding but this has been discounted due to the loadings that this would put on to the existing structure.</p>
12. Professional Fees	Engineers, QS, CDMC and Planning fees.

### Basis of Costs

1. The costs exclude VAT.
2. The costs have been forecast to 1<sup>st</sup> ¼ 2011.
3. The costs are based on information and scope of works provided by Blue Sky intended to form basis of a 20 year lifecycle repair solution. Major on-going works deemed necessary over the 20 year lifecycle are costed in the separate 20 year lifecycle capital investment schedule.

The costs are generally based on approximate quantities taken from drawings provided by Blue Sky. No site visit or site visit/measurement has been undertaken.

4. No allowance has been made within the above costs for the following but for which optional costs are provided as follows:-
  - signage installations £32,000.00
  - parking equipment installations £150,000.00
  - CCTV installations £35,000.00 (entry/exits and payment coverage)
  - lighting and electrical installations £350,000.00
  - lift installations (Park Row lifts only) £200,000.00

The inclusion and timing of these works will be dependant on commercial considerations and/or the existing condition of the assets given the proposed lifecycle of the property. Their inclusion or exclusion would also need to be considered in relation to the separate 20 year lifecycle capital investment schedule.

5. No allowance has been made for the refurbishment of the existing offices, accommodation, W.C's and the like.
6. The general repair solution is based upon the installation of cathodic protection to the decks. The use of MCI's was considered but it was felt it would not offer a technically successful solution. The omission of cathodic protection and alternative use of MCI's would reduce costs by £900,000.00



## TRENCHARD STREET MSCP 20 Year Life Cycle Capital Investment/Maintenance Programme

Item of Structure/Services	Frequency /Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
OCC Appurtenal/Collection Ducts	-					0,000							0,000									
Structural Repairs	2		10,000		10,000		10,000		10,000		10,000		10,000		10,000		10,000		10,000		10,000	
Structural Repairs	-										10,000											
Painting	-																					
Joinery Repairs	-										60,000											
Intermediary Deck Coatings	-												1,075,000									
Redwoodish	-																330,000					
Discharge	-					0,000					5,000						5,000					5,000
Mechanical & Electrical	-																					
Philatring	-								5,000										4,500			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
<b>Munster Total</b>	0	10,000	0	10,000	13,500	10,000	0	10,000	0	15,000	0	10,000	0	1,075,000	0	10,000	340,000	10,500	0	10,000	0	10,000

Investment Life Cycle Maintenance Cost: 20 years: 1,524,000

Issue Date: 7 August, 2010

**NOTES**

1. The costs are based on present day price levels and no allowance for inflation has been made.
2. The costs should be read in conjunction with the 20 Year Repair budget costs.
3. No allowance has been made for the following, which is deemed to be outside of the scope of a structural repair costing exercise:
  - parking equipment installations and maintenance
  - CCTV installations and maintenance
  - refurbishment of welfare facilities and WC's etc.
  - general machine maintenance
  - statutory FPM, inspections and testing
  - lift installations and testing
4. For the purpose of the analysis it has been assumed that the electrical installations have 20 years of covering the remaining useful life remaining.

### Appendix 3 - Project Costs

Project Name:	Repairs to Trenchard St MSCP
Option	10 year repair and maintenance

One Off Expenditure	Total	Costing assumptions
Preliminaries	£195,000	Site set up & management, high level access & tempoary propping
Structural concrete repairs	£249,000	Repairs as per Blue Sky drawing 8092/30 - 42 plus contingency cost for further expected work
Cathodic protection	£50,000	Slow down deterioration of parapets & remove the need to re erect access
Anti carbonation treatment & repairs	£289,900	Application to all exposed surfaces
Masonry repairs	£5,000	Sundry brickwork repairs & repointing
Joinery repairs	£20,425	Minor remedial works to joinery & ironworks
Deck coatings	£2,750	Lightweight coating membrane to pedestrian bridge to slow deterioration (10 year guarantee)
Vehicle impact barriers	£56,100	Retro-fit vehicle impact barriers to all sensitive areas as per Blue Sky drawing 8092/30 - 42
Strengthening of columns	£20,000	Work required to 3 columns which are understrength
Drainage	£24,500	Overhaul of internal drainage installations & gullies to prevent ponding
Replacement of movement joints	£69,300	Replace all movement joints
Repair render to staircore beams & stairwell nosings	£32,500	Repairs to stairwell (£5k) & new nosings for H&S requirements (£27.5k)
Professional fees	£50,000	Engineer & CDM costs
<b>Total</b>	<b>£1,064,475</b>	

Gross Total
<b>£195,000</b>
<b>£249,000</b>
<b>£50,000</b>
<b>£289,900</b>
<b>£5,000</b>
<b>£20,425</b>
<b>£2,750</b>
<b>£56,100</b>
<b>£20,000</b>
<b>£24,500</b>
<b>£69,300</b>
<b>£32,500</b>
<b>£50,000</b>
<b>£1,064,475</b>

### Appendix 3 - Project Costs

<b>Project Name:</b>	0
Option	10 Year prudential loan at 5.5% interest
Assumptions	Use of car park renewals fund & other reserves.

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
	Year 0	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9	Year10	
<b>Project Costs</b>	£1,064,475											<b>£1,064,475</b>

Source of funding			
Car park renewals fund	£250,000	<b>£250,000</b>	Utilisation of current renewals fund (as at March 2011)
Reserves		<b>£0</b>	Utilisation of other reserves (as at March 2011)
Prudential Borrowing	£814,475	<b>£814,475</b>	
<b>Total</b>	<b>£1,064,475</b>	<b>£1,064,475</b>	

#### Prudential Repayments

<b>Repayment (annuity)</b>	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	<b>£1,080,550</b>	Repayment plan using equal annual parts (5.5 % interest) - Preferred method
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#### Source of repayment

<b>Car Park renewals fund</b>	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£108,055	£1,080,550	Surplus reserve fund each year
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Appendix 4

Risk Assessment for the Structural Appraisal of Trenchard St MSCP and Options for Repairs and Future Life Care Plan

Risk	Inherent Impact/ Prob	MITIGATION	Residual Impact/ Prob	RESPONSIBILITY
<p>Failure to undertake structural repairs</p>	<p><b>M/H</b></p>	<p>Parking Services Business Team Manager</p> <p>Structural failures to be addressed from existing maintenance budgets. May result in areas of the car park needing to be closed to mitigate health &amp; safety risks to customers and staff.</p>	<p><b>M/H</b></p>	<p>Group Manager, Parking Services</p>
<p>Loss of revenue as areas of car park are closed on health and safety grounds</p>	<p><b>M/H</b></p>	<p>Parking Services Business Team Manager</p> <p>Need to seek adjustments to Parking Services budget. Trenchard</p>	<p><b>M/H</b></p>	<p>Group Manager, Parking Services</p>

		MSCP generates around £2,000,000 in parking income per year. This is a significant revenue contribution to the City development budget.		
Increased maintenance costs if life care plan is not implemented.	M/H	<p>Parking Services Business Team Manager</p> <p>Increase planned maintenance budget. The current maintenance a costs for the car park is around £101,000 per year.</p>	M/H	Group Manager, Parking Services
Loss of reputation as a result of possible closure of areas of the car park on health & safety grounds.	M/H	<p>Parking Services Business Team Manager</p> <p>Operate the open areas in the car park in such a way to minimise the impact and inconvenience to customers.</p>	M/H	Group Manager, Parking Services

<p><b>Legal action/compensation claims for injury to customers or staff and their property.</b></p>	<p><b>M/H</b></p>	<p><b>Parking Services Business Team Manager</b></p> <p><b>Increase planned maintenance budget.</b></p> <p><b>Operate the open areas in the car park in such a way to minimise the impact and inconvenience to customers.</b></p>	<p><b>M/H</b></p>	<p><b>Group Manager, Parking Services</b></p>
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## Structural repairs to Trenchard St MSCP and implementation of a 10-year life care plan.



### Bristol City Council Equality Impact Assessment Form

Equalities impact assessments (EqIAs) are used to ensure we are considering the needs of all staff and all service users when planning or changing services, strategies, policies, procedures and/or contracting services, undertaking reviews or planning projects. The process you use to undertake equalities impact assessments enables us to evidence that we are giving **due regard** to the public sector equality duty.

It is best to start your Equality Impact Assessment (EqIA) at the beginning of any project, policy revision, strategy change etc. It will then become an integral part of the planning process, ensuring that we, as a council, "get it right first time".

We also recommend that you work through the form using the EqIA guidance and that you contact your directorate equalities officer for support. See the end of this document for a list of equalities officers. The form can be completed electronically and the boxes to complete will have the question highlighted in bold and the space thereafter will expand as you type into it.

#### **Public sector equality duty**

We carry out equalities impact assessments as part of our public sector equality duty (Equality Act 2010 section 149). The public sector equality duty requires us give **due regard** to the need to:

- a) Promote equality of opportunity
- b) Eliminate unlawful discrimination
- c) Promote good relations between people who share a 'protected characteristic' and those who do not.

The public sector equality duty requires us consider the effect our policies and practices have on people who share the following '**protected characteristics**':

- Age
- Pregnancy & maternity
- Transgender
- Sexual orientation
- Religion and belief
- Ethnicity
- Gender
- Disability

Hereafter we refer to groups of people who share a protected characteristic as 'equalities communities'.

### **How the EqIA should be used as part of the decision-making process**

Each decision-maker must, therefore, have due regard to the need to:

1) Eliminate discrimination, harassment, victimisation and any other conduct prohibited under the Equality Act 2010.

2) Advance equality of opportunity between persons who share a relevant protected characteristic and those who do not share it. This involves having due regard, in particular, to the need to:

- Remove or minimise disadvantage suffered by persons who share a relevant protected characteristic;
- Take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of people who do not share it. In relation to disabled people, this includes, in particular, steps to take account of disabled persons' impairments (disabilities);

- Encourage persons who share a protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.

3) Foster good relations between persons who share a relevant protected characteristic and those who do not share it. This involves having due regard, in particular, to the need to --

- Tackle prejudice; and
- Promote understanding.

This EqIA form is structured to assist you to consider the above as you develop your proposal. In order to comply with the public sector equality duty you should set out how you have given due regard to the above issues in reports to decision-makers, particularly in reports to elected members. The EqIA provides evidence of compliance with the public sector equality duty.

Reports to decision-makers must include an equalities impact assessment section where you report how the public sector equality duties are relevant to the proposals and how these duties have been taken into account in developing the proposals. Step 6 of the EqIA can be replicated into the report and we suggest you provide e-link to full document, or include the EqIA as an appendix. Where no equality impact assessment has been undertaken, give reasons why not.

**Name of policy, project, service, contract, review or strategy being assessed (from now on called ‘the proposal’)**

Structural repairs to Trenchard St MSCP and implementation of a 10-year life care plan.

**Directorate and Service:** City Development

**Lead officer:** David Bunting

**Additional people completing the form:** Gary Lloyd – Transport Business Team Manager

**Start date for EqIA:** 22<sup>nd</sup> June 2011

**Estimated completion date:**

<b>Step 1 – Use the following checklist to consider whether the proposal requires an EqIA</b>		
<p>1. What is the purpose of the proposal?</p> <p>Parking Services are seeking cabinet authorisation to spend £1,064,475 to undertake structural repairs to Trenchard St MSCP and to implement a 10 year life care plan.</p>		
	<b>Yes</b>	<b>No</b>
<p>2. Could this be relevant to our public sector equality duty to:</p> <p>a) Promote equality of opportunity</p> <p>b) Eliminate discrimination</p> <p>c) Promote good relations between different equalities communities?</p>		No

If you have answered 'no' to question 2, please describe your reasons.

Proposals are only to repair parts of the car park where the concrete structure is deteriorating, as spalling concrete etc can be a major health and safety risk to customers and staff in the car park. Adopting and funding a 10 year life care plan will ensure that the deterioration of the structure is slowed to provide a longer operational life for the car park, and reduce the health and safety risks associated with the structure.

The order and extent of the structural repairs to be made to the car park will not be known until the contractor has been appointed and detailed work schedules for the repairs have been determined. If works have to be undertaken in the areas marked out as disabled parking on Levels 1 & 8 in the car park, we will seek to minimise the impact of such works by designating other bays on the same level as temporary disabled bays, or by providing parking in the operational bays on the entrance area to the car park from Trenchard St.

3. Could the proposal have a positive effect on equalities communities?		No
Please describe your initial thoughts as to the proposal's positive impact		
4. Could the proposal have a negative effect on equalities communities?		No
Please describe your initial thoughts as to the proposal's negative impact		

If you answer 'yes' to questions 2 or 4 you will need to continue to undertake a full EqIA and complete this form. If not, please sign off now:

**Additional comments / recommendations**

As Parking Services are seeking cabinet authorisation to spend £1,064,475 to undertake structural repairs to Trenchard St MSCP and to implement a 10 year life plan it is not deemed necessary to complete a full Equality Impact Assessment due to the fact that customers will still be able to use the car park and provision will be made if for example specific parking areas are affected by the work being undertaken.

Any further changes to this car park / service will need a further equalities impact assessment completed.

Monitoring of the structural repair contract will be an essential element once it has been awarded to make sure that mitigation is in place if needed and so due to this it needs to be incorporated into the tender process from the start.

Part 1 of the document has been agreed and signed off on the basis that this is primarily a health and safety consideration and a request to spend the budget on this repair work.

Terry Bullock

Jane Hamill

Service Manager Highways and Traffic

Equalities Adviser

Date: 7<sup>th</sup> July 2011

Date: 7<sup>th</sup> July 2011

## Appendix 6

### Eco Impact Checklist

<b>Title of report: Report on the Structural Appraisal of Trenchard St MSCP and Options for Repairs and Future Life Care Plan</b>				
<b>Report author: Gary Lloyd, Business Team Manager, Parking services</b>				
<b>Anticipated date of key decision: 21<sup>st</sup> July 2011</b>				
Summary of proposals:				
Trenchard St Multi-Storey Car Park (MSCP) was designed and constructed in the mid-1960s with an anticipated life span of 30 years. Preliminary inspections have revealed that the structure of the car park has deteriorated in several locations. It is proposed to extend the life of the car park by 10 years by making repairs to the concrete structure.				
Will the proposal impact on...	Yes/No	+ive or -ive	If yes...	
			Briefly describe impact	Briefly describe Mitigation measures
Emission of Climate Changing Gases?	Yes	-ive	Materials will need to be transported to the site and used to repair the concrete structure of the building.	<p>Ensure that contractors minimise waste, and that, where technically feasible, any waste is sent for recycling rather than landfill. The contractor should make efforts to use materials from local sources to minimise the amount of transport involved with the repair works.</p> <p>During the repair work, where car park lighting and other infrastructure that consume fossil fuels need to be replaced, energy efficient alternatives should be used to replace them. Consultation with the energy management unit should take place at the design stage of the project.</p>
Bristol's vulnerability to the effects of climate change?	No			
Consumption of non-renewable resources?	Yes	-ive.	Repairs will require concrete and possible minimal	The design and planning of the repair works should consider efforts to

			<p>steel strengthening, new seals in a number of joints and repairing parts of the deck coatings.</p>	<p>minimise the use of non-renewable resources.</p> <p>Contractors will be encouraged to use recycled materials where possible if the materials do not add to further corrosion of the repaired areas.</p>
Production, recycling or disposal of waste	Yes	-ive.	The repairs will generate waste.	<p>The contractor as part of the tendering process will be asked to recycle as much material as possible on site, ensure raw materials are stored carefully to avoid spillage, generation of a nuisance and ensure that any waste management activities are compliant with relevant legislation.</p> <p>The contractor will register the site with the Considerate Constructors Scheme and must achieve a Certificate of Performance Beyond Compliance, as defined by the scheme.</p>
The appearance of the city?	No			
Pollution to land, water, or air?	Yes	-ive.	<p>Potentially, likely to have grey water run off contaminated with concrete material.</p> <p>There will be dust generated from the concrete repairs as "bad" areas are removed.</p>	<p>Ensure contractor introduces measures to control and treat contaminated water appropriately. There should be no run-off to surface waters from the site. This will be addressed in the tendering process with advice from Pollution Control to ensure compliance with relevant legislation.</p> <p>Impacts from dust generated during the works will be mitigated using best practice</p>



				<p>techniques for construction sites.</p> <p>The contractor will register the site with the Considerate Constructors Scheme and must achieve a Certificate of Performance Beyond Compliance, as defined by the scheme.</p>
Pollution Noise	Yes	-ive.	It is anticipated that power tools will be used to remove areas of concrete from the structure. These are likely to generate noise above normal levels in the car park.	<p>Contractors will be instructed to work during the weekday eg. 0800 and 1800. Weekend working will be avoided if possible unless there are exceptional circumstances. Noise suppression techniques will be used where feasible.</p> <p>The contractor will register the site with the Considerate Constructors Scheme and must achieve a Certificate of Performance Beyond Compliance, as defined by the scheme.</p>
Wildlife and habitats?	No			

**Consulted with: Andrew Edwards**

**Summary of impacts and Mitigation - to go into the main Cabinet/ Council Report**

The significant impacts of this proposal are that new materials will be required to undertake the works (concrete and a small amount of steel. The repair works will generate waste material and dust from removal of concrete in need of repair and water used in the building works that will be contaminated from the concrete manufacturing and the control of dust. Power tools will be required to remove concrete prior to facilitate the repairs that will generate noise and dust.

The proposals include the following measures to mitigate the impacts: the tender process will ensure that the successful contractor will be required to comply with relevant legislation and work practices to ensure as much waste material is recycled, that dust and contaminated water run off is contained and disposed of appropriately. The contractor will register the site with the Considerate Constructors Scheme and must achieve a Certificate of Performance Beyond Compliance, as defined by the scheme. Contractors will be instructed to work during the weekday eg. 0800 and 1800. Weekend working will

be avoided if possible unless there are exceptional circumstances. Parking Services will be appointing a CDM Co-ordinator to draft the full specification for the structural repairs and manage the project on site to ensure that the contractor complies with the council's requirements. Contractors as part of the tender process will be required to produce method statements and risk assessments.

The net effects of the proposals are on balance potentially negative but mitigation will reduce these effects as practicably possible.

**Checklist completed by:**

Name:	Gary Lloyd
Dept.:	City Development, Parking Services
Extension:	24287
Date:	28 <sup>th</sup> June 2011
Verified by Sustainable City Group	