Public

Neath Port Talbot County Borough Council
Cyngor Bwrdeistref Sirol Castell-nedd

Democratic Services
Gwasanaethau Democrataidd

Chief Executive: K.Jones

Date: 29th November 2022

Dear Member,

CABINET - WEDNESDAY, 30TH NOVEMBER, 2022

Please find attached urgent report for consideration at the next meeting of **Cabinet - Wednesday, 30th November, 2022.**

13. **Urgent Items (Pages 1 - 118) Pontardawe Swimming Pool – Emergency Works**

    Any urgent items (whether public or exempt) at the discretion of the Chairperson pursuant to Statutory Instrument 2001 No. 2290 (as amended).

Yours sincerely

p.p Chief Executive

This page is intentionally left blank

NEATH PORT TALBOT COUNTY BOROUGH COUNCIL

CABINET

30th November 2022

Joint Report of Andrew Thomas Director of Education, Leisure and Lifelong Learning and

Nicola Pearce Director of Environment and Regeneration.

Matter for: **Decision**

Wards Affected: Pontardawe, Alltwen, Rhos, Trebanos.

Pontardawe Swimming Pool - emergency works funding.

1. Purpose of the Report

The purpose of this report is to seek approval for the allocation of funds for emergency works to be carried out at Pontardawe Swimming Pool.

2. Executive Summary

The Council commissioned ARUP to carry out a building review of Pontardawe' Swimming School.

The report is appended as Appendix 1, however it has highlighted that there is deterioration of the structural concrete in columns, pool tank walls, concrete soffits and external concrete walls since previous inspections to the Learner Pool and Spectator Stand.

Accordingly, a decision was taken, jointly with Celtic Leisure Limited on the 28th November 2022, to temporarily close Pontardawe Swimming Pool with effect from Wednesday 30th November 2022, based on the advice contained within the attached report, to enable repair work to be undertaken.

It is envisaged the pool will re-open at the end of January 2023.

It is estimated (subject to a detailed working programme being prepared by the proposed contractor) that the costs of repair will be as follows:

* Initial cost of installing props and bracing - Circa £20k to £25k

* Ongoing hire cost for props and bracing - Circa £3k to £4k per month

* Ongoing survey cost of £5k every six months to check structure and propping for no more than 2 years.

There will also be an additional cost for removal at the end of the hire period.

3. Background

In July 2022, the Council appointed ARUP to carry out a review of Pontardawe Swimming Pool building services and the exposed reinforced concrete structure and to provide advice on the available options for repair and refurbishment with a particular focus on the future longevity of the structural frame. It was not possible to survey the area around the training pool during the visit due to it being a confined space requiring specialist training and equipment. It was therefore recommended that a specialist company be appointed to inspect this area. The survey was subsequently undertaken in November 2022.

If the Council wishes the facility to continue to operate, immediate action will be required, with a propping scheme developed and installed by a temporary works specialist. It is likely that the following will be required to extend the life by up to two years:

• Vertical propping to beams and slabs around the perimeter of the training pool

• Propping to external retaining walls around training pool

• Vertical and horizontal propping to columns below spectator seating adjacent to main pool

• Inspection of both pool structures by suitably qualified personnel at 6-month intervals to identify any significant deterioration or modifications required to the temporary supports.

Immediately, a decision has been taken, jointly with Celtic Leisure Limited on the 28th November 2022, to temporarily close Pontardawe Swimming Pool with effect from Wednesday 30th November 2022, based on the advice contained within the attached report on health and safety grounds. Subject to Members approval of funding to enable repair work to be undertaken, it is envisaged the pool will re-open at the end of January 2023.

It is estimated (subject to a detailed working programme being prepared by the proposed contractor) that the costs of repair will be as follows:

* Initial cost of installing props and bracing - Circa £20k to £25k

* Ongoing hire cost for props and bracing - Circa £3k to £4k per month

* Ongoing survey cost of £5k every six months to check structure and propping for no more than 2 years.

There will also be an additional cost for removal at the end of the hire period.

4. Financial Impact

The initial cost of this proposal will be funded from the Council's general reserve balance. The ongoing monitoring costs will be funded through the Education, Leisure and Lifelong learning revenue budget.

6. Integrated Impact Assessment

A first stage impact assessment has been undertaken and is appended as (Appendix 2) to assist the Council in discharging its legislative duties (under the Equality Act 2010, the Welsh Language Standards (No.1) Regulations 2015, the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.

The first stage assessment has indicated that a more in-depth assessment is not required.

7. Valleys Communities Impacts

There will be a negative impact with the temporary closure of Pontardawe Swimming Pool. However, this is only intended to be temporary with the facility reopening at the end of January 2023. Celtic Leisure will embark on a campaign to notify individuals of alternative facilities that will be available.

8. Workforce Impacts

There are no council workforce impacts associated with this report. Celtic Leisure staff will be temporarily transferred to other leisure sites during the closure.

9. Legal Impacts

The responsibility for maintenance of the pool structures is set out in the lease between the Council and Celtic Leisure Ltd dated 14th April 2016 and the Monitoring Officer advises that the decision to address the health and safety matters analysed in the ARUP report is a matter for determination between the Council and Celtic Leisure Ltd jointly in order that statutory duties under the Health and Safety Act etc.1974 may be fulfilled. These matters are delegated to officers under the Council's Constitution.

Responsibility for meeting the costs of the works detailed in the report fall to the Council under the terms of the aforesaid lease. The authority to fund such works is the responsibility of the Council's Executive.

10. Risk Management

Without the pool being temporarily closed there is an unacceptable risk to the health and safety of pool users and the Celtic Leisure workforce. Without investment to enable the recommended works to be carried out, Pontardawe Swimming Pool will be permanently closed.

11. Consultation

There is no requirement under the Constitution for external consultation on this item. Detailed discussion has taken place with Celtic Leisure Limited.

12. Recommendations

It is recommended, that having due regard to the integrated impact assessment that funds as detailed in this report be allocated to undertake repair work at Pontardawe Swimming Pool.

13. Reasons for Proposed Decision

Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.

13. Implementation of Decision

The decision is proposed for implementation immediately with the consent of the Chair of the Cabinet Scrutiny Committee.

14. Appendices

Appendix 1 ARUP Report.

Appendix 2. First stage Integrated Impact Assessment

15. List Background Papers

None.

Officer Contact

Paul Walker Operations Coordinator

p.walker@npt.gov.uk

Tel: 07899923478

This page is intentionally left blank

ARUP

Neath Port Talbot County Borough Council

Pontardawe Swimming Pool

Reinforced Concrete Structure and Building Services Review

Reference:

Issue | 21 November 2022

Job number 278278

Ove Arup & Partners Limited
4 Pierhead Street
Capital Waterside
Cardiff
CF10 4QP
United Kingdom
arup.com

ARUP

Document Verification

Project title	Pontardawe Swimming Pool
Document title	Reinforced Concrete Structure and Building Services Review
Job number	278278
Document ref	
File reference	4-50

Revision	Date				
Draft	12/08/2022	**Description**	Draft Issue		
			Prepared by	**Checked by**	**Approved by**
		Name	Nikki Stockbridge/ Robert Jenkins / Andrew Knight	Robert Jenkins	Nikki Stockbridge
		Signature			
Issue	25/08/2022	**Filename**	Pontardawe swimming pool building services and structure update report INTERIM.docx		
		Description			
			Prepared by	**Checked by**	**Approved by**
		Name	Nikki Stockbridge/ Robert Jenkins/ Andrew Knight	Robert Jenkins/Rick Davis	Nikki Stockbridge
		Signature			
Draft updated report	21/11/2022	**Filename**	Pontardawe swimming pool building services and structure update report-revised.docx		
		Description	Updated to include CRLs findings		
			Prepared by	**Checked by**	**Approved by**
		Name	Nikki Stockbridge/ Robert Jenkins/	Nikki Stockbridge/ Robert Jenkins/	David Gibbs
		Signature			

Issue Document Verification with Document ✓

Contents

Tables

Figures

Appendices

1. Executive Summary

Pontardawe swimming centre opened in 1974. It is typically a single storey reinforced concrete building. The ground floor houses two reinforced concrete indoor swimming pools, changing rooms with showers, w/c facilities and main reception desk with supporting administration offices and stores. The basement level houses the plant area. The basement area around the main pool is easily accessible but the area around the smaller 'training' pool is a confined space. The building envelope is a mix of metal sheet steel cladding, glazing and brick construction.

Several condition surveys have been undertaken in the last ten years by Arup, Neath Port Talbot County Borough Council (NPTCBC) and Concrete Repairs Limited (CRL). These have identified a range of structurally significant defects which now require immediate comprehensive structural repairs. The most recent condition survey was carried out by Arup in 2020 during a period when the building was closed to the public due to the Covid 19 pandemic. The building has since reopened.

In July 2022, NPTCBC appointed Arup to review of the building services and exposed reinforced concrete structure and advise on the available options for repair and refurbishment with a particular focus on the future longevity of the structural frame. It was not possible to survey the area around the training pool during this visit due to it being a confined space requiring specialist training and equipment. It was therefore recommended that CRL (or equivalent) was re-appointed to re-inspect this area. The survey was subsequently undertaken in September 2022.

Summary of structural findings

The 2022 Arup survey and subsequent CRL inspection both identified that the already serious structural defects noted in previous reports had continued to deteriorate. Comprehensive structural repair of these elements is now both necessary and urgent. The most significant concerns regarding the building structure are as follows:

- The majority of columns underneath the spectator seating area around the main pool have suffered significant section loss and reinforcement corrosion at their base. The worst affected columns are now supplemented by Acrow props that have been installed by NPTCBC. It is unlikely that the continued use of Acrow props would satisfy design code requirements as they have no lateral restraint capacity. Therefore, it is recommended that alternative, temporary bracing, is installed to ensure that stability is retrained until a full structural repair or replacement of the affected structural elements can be undertaken. **It is recommended that further structural advice is sought from a temporary works designer regarding suitable temporary bracing and propping for these columns.**
- The high levels of carbonation and chlorides found in the 2014 and 2022 test results suggest a reinforcement corrosion risk classification of 'Extremely High' in accordance with BRE Digest 444. Without intervention, further degradation will undoubtedly occur with a wide area likely to be affected at an increasing rate. Even where surface damage to the concrete has not occurred, there is a potential for significant reinforcement loss to have occurred due to the corrosion associated with high chloride content tending to lead to rapid loss of reinforcement that is not necessarily manifested outwardly. **It is recommended that ongoing surveys are carried out by a Structural Engineer together with ongoing testing by CRL (or equivalent) to monitor the speed of deterioration.**
- Where the carbonation front has reached the reinforcement, concrete is spalling extensively. This is occurring throughout the structure, but in particular in the void around the training pool. Structurally significant deterioration has been identified in some areas with up to almost 70% loss in reinforcement capacity found in isolated breakout areas. It is not clear whether this is representative of all structural elements; however, based on the extensive spalling to the full perimeter of the pool, it is clearly not an isolated case. **It is recommended that, due to the ongoing deterioration of the concrete and the extensive section loss identified to the soffit and some other areas, the building should not remain in use without propping or substantial structural repairs being undertaken urgently.**
- Finally, while outside the scope of this review, significant cracking was observed to the rear masonry wall while undertaking the survey. This is considered likely due to corrosion of the lintels. **It is**

recommended that further investigations as to the cause of this are carried out within the next 6 months.

In our opinion, to extend the life of the existing building significantly would require extensive and costly repairs to be made. When necessary building services replacements and the facade repairs are also considered, the repair and refurbishment of this building is likely to be cost prohibitive when compared to the cost of providing a new facility. It is therefore recommended that a whole life costing exercise is undertaken by a cost consultant prior to undertaking any significant structural repairs, particularly as economically viable repairs are unlikely to significantly extend the life of the facility considering the level of contamination and the environment.

If NPTCBC wishes to continue to operate the facility in the meantime, immediate action will be required, with a propping scheme developed and installed by a temporary works specialist. It is likely that the following will be required to extend the life by up to two years:

- Vertical propping to beams and slabs around the perimeter of the training pool
- Propping to external retaining walls around training pool
- Vertical and horizontal propping to columns below spectator seating adjacent to main pool
- Inspection of both pool structures by suitably qualified personnel at 6-month intervals to identify any significant deterioration or modifications required to the temporary supports

Summary of building services findings

There has been no visible improvement in the condition of the building services since the last visit in 2021.

The previous visit noted that some minor refurbishment works have taken place to front of house areas such as the main swimming pool lighting. This included an upgrade to a distribution board serving the swimming pool area and a freshen up to the front reception.

The level of surface corrosion to some of the heating pipework and radiators located in the pool corridor towards the rear of the changing rooms has deteriorated and increased.

Old redundant services and systems have been left in situ within the basement plant room area. This will make future refurbishment difficult and more expensive requiring significant enabling works to remove and strip out old systems such as the old pool plant & sand filters.

It is noted that this report was written following a review of the building services and exposed reinforced concrete structure only. For a full picture of the condition of the building, this report is to be read in conjunction with previous Arup survey reports.

2. Introduction

Pontardawe swimming centre was originally built and opened in 1974. The ground floor houses two indoor swimming pools, changing rooms with showers, w/c facilities and main reception desk with supporting administration offices and stores, whilst the basement level houses the plant area. The basement area around the main pool (Figure 1) is easily accessible however the area around the smaller 'training' pool is a confined space and cannot normally be accessed. The building envelope is a mix of metal sheet steel cladding, glazing and traditional brick construction.

The building structure consists typically of a single storey reinforced concrete frame with two reinforced concrete swimming pool tanks and a localised pool plant basement level around the largest pool as shown in the drawing extract below.

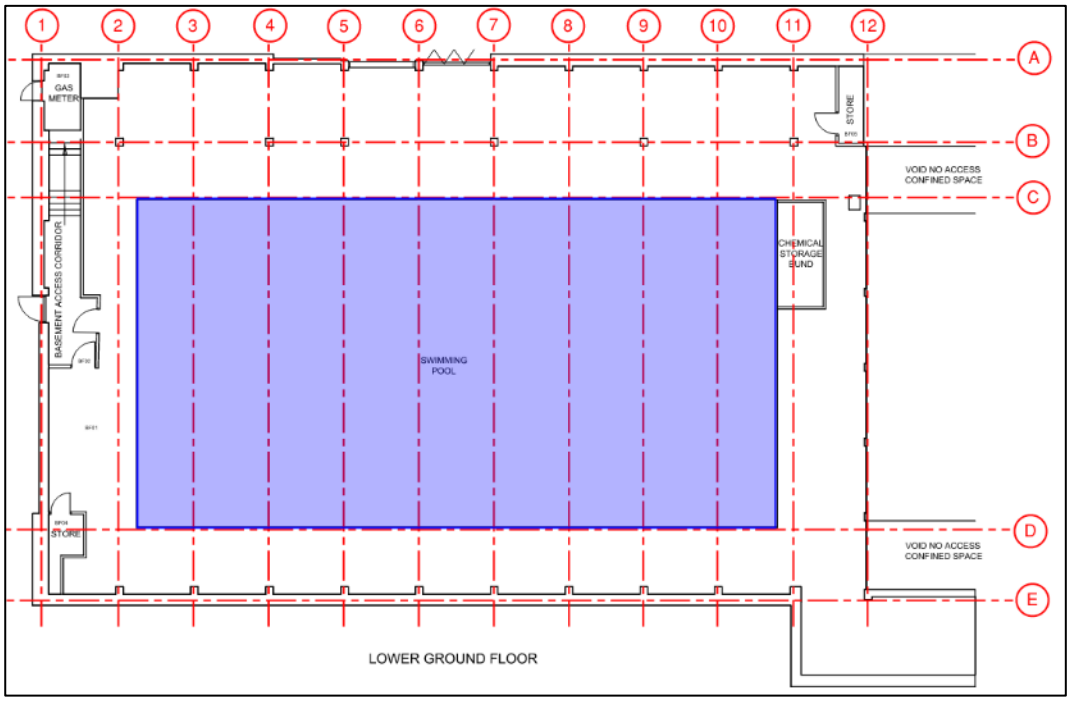


Figure 1 – Plan of Basement area around main pool – note gridlines added for the purposes of referencing in this report only

In July 2022, following on from previous commissions in 2012 and 2020, Arup were requested by Neath Port Talbot County Borough Council (NPTCBC) to revisit site to inspect the condition of the reinforced concrete frame and to review other documentation that has since been supplied with regards to other inspections, concrete testing and repair that were carried out by NPTCBC and Concrete Repair Limited (CRL) respectably in 2014.

Arup visited the site on 5th July 2022 to view the further deterioration of the reinforced concrete structure since the previous visit in December 2020.

The Arup survey was visual only with no intrusive surveys or concrete testing undertaken. As per the brief, the purpose of this survey was simply to view and comment on the condition of the concrete, compared to that documented previously, with a view to making recommendations relating to the refurbishment or replacement of the concrete structure. However, while not covered by the scope, significant observations relating to other structure or building envelope elements have been noted where these were clearly visible.

As a result of the observations made during the Arup survey, recommendations were made that CRL be re-appointed to survey the area around the training pool (red area on Figure 2). This area was not possible to survey during the Arup visit due to it being a confined space requiring specialist access requirements and equipment.

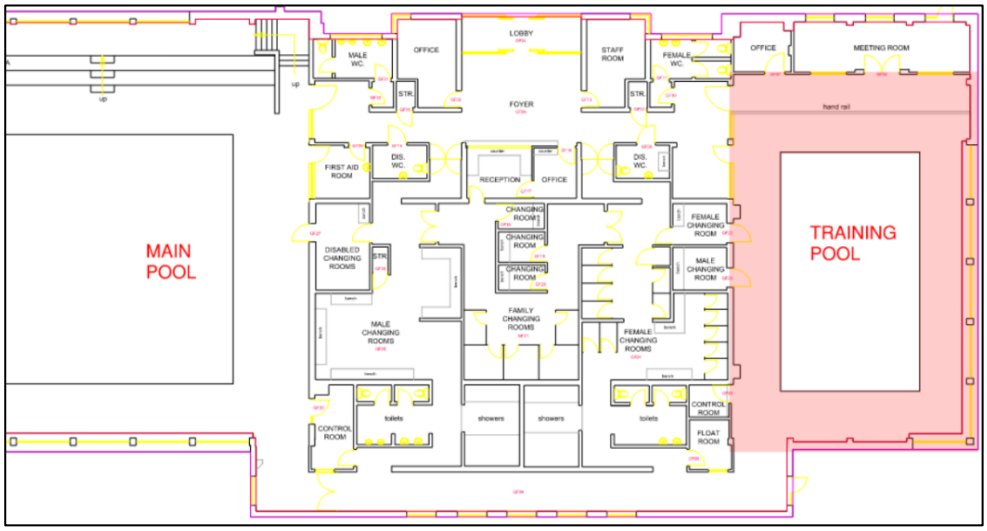


Figure 2 – Part-plan of facility with area surveyed by CRL highlighted red

This report covers the observations made during the most recent Arup and CRL visits as well as an overview of the previous Arup surveys and a desktop review of the following documentation:

- Neath Port Talbot County Borough Council: Pontardawe Swimming Pool Structural Inspection of main pool under croft (Jan 2014). Report No. R13121/PSP/TAP/001
- Concrete Repair Ltd: Condition Assessment of The Undercrofts and Plant Room at Pontardawe Swimming Pool (June 2014). Report No. SUR141509

This report should be read in conjunction with the above documents to give a full picture of condition of the building.

3. Summary of previous findings

The structural aspects of the following historical reports have been reviewed and summarised below:

1. Pontardawe Swimming Pool Life Cycle Condition Survey Report. Arup, September 2012.
2. Pontardawe Swimming Pool Structural Inspection of main pool under croft. NPTCBC, January 2014.
3. Condition Assessment of the Undercrofts and Plant Room at Pontardawe Swimming Pool. CRL, June 2014.
4. Pontardawe Swimming Pool Condition Survey Report, Arup, February 2021.

3.1 Arup Report – September 2012

Arup previously conducted a visual mechanical, electrical and building fabric condition survey of Pontardawe Swimming Pool on Tuesday 10th July 2012. This involved a non-intrusive survey of the building's structure, fabric and services throughout the building.

In terms of the building structure, the following defects were noted and recommendations made:

- Concerns were raised about the structural column in the basement plant room which was showing signs of cracking and spalling and in need of immediate repair as well as further investigation as to the likely causes of corrosion. (Further review of photos taken at the time suggest that the column referred to is that shown on B/4 in Figure 1).
- It was thought that the reinforcement corrosion had likely been caused by the pool treatment chemicals and over time this has caused the concrete to crack and corrode exposing the steelwork.
- It was recommended that the repairs and further investigations should be carried out within 3 years of the report issue.

3.2 Neath Port Talbot County Borough Council Report – January 2014

Following the findings of the Arup 2012 report and, in response to the recommendations made, the structures department of NPTCBC carried out a further inspection of the concrete structure in January 2014. This was also a visual structural inspection only with no intrusive or non-intrusive testing carried out. The inspection was again limited to the accessible areas of basement of the main pool only. The confined spaces around the training pool were not inspected.

3.2.1 Summary of findings

All concrete elements inspected show evidence of efflorescence and significant spalling/de-lamination. The areas of most concern were highlighted as:

- The bottom of four columns in the basement, under the spectator seating.
- Pool tank walls (particularly at low level and especially at the deep end of the pool)
- Edge beam along perimeter (town elevation)
- Slab soffit

3.2.2 Concrete columns under spectator seating

There are six internal reinforced concrete columns located adjacent to the pool plant equipment in the basement. These support the spectator seating above. Four of the columns were found to have extensive spalling and cracking at low level. The full extent of this damage was not ascertained but it was identified that hand sized pieces of concrete were spalling with corroded reinforcement visible. A significant loss of cross-sectional area to the bottom of these columns was noted.

The humidity in the basement can be particularly high and evidence of a 'tide mark' on the columns, approximately 50mm up from the basement slab, was noted. This suggests that ponding may have occurred around these columns at some point.

It is understood that following this visit, due to the visible condition of the concrete, Acrow props were installed following capacity checks undertaken by the structures department of NPTCBC.

3.2.3 Pool Walls

The lower portion of the walls around the outside face of the of the swimming pool tank displayed extensive efflorescence in large patches and de-lamination to an approximate depth of 10-15mm. The efflorescence appears to be common at a construction joint approximately 600mm up the pool wall from the basement slab level. The de-lamination was particularly evident along the deep end of the pool. It was also evident in patches along the two long elevations.

It was noted that some patch repairs have been carried out in the past, however the majority of the low-level repairs were already starting to spall off whilst the higher-level repairs appeared intact.

3.2.4 Other areas of significant concrete deterioration

Running water was evidenced at the concrete column and down stand beam located near the shallow end of the main pool, directly under an area of defective tiling on the poolside slab (approx. location D/12 on Figure 1). The down stand beam has discoloured efflorescence residue down one side with drips of water noted as falling intermittently. The supporting column has a longitudinal crack running up its full height.

3.3 Concrete Repairs Ltd Report – June 2014

The poor condition of the concrete noted during the NPTCBC visual inspections in January 2014 led to NPTCBC appointing CRL Surveys to undertake a programme of investigation and testing works to the concrete elements around the pool tanks. CRL attended site in May 2014 to carry out the following: -

1. Visual inspection of all the undercroft concrete (including crawl spaces around the training pool)
2. Hammer testing, inclusive of existing concrete repairs
3. An assessment of the condition of the concrete, as follows:
    a. Check depths of cover to reinforcement
    b. Determine depths of carbonation
    c. Undertake screening for chlorides

CRL then provided recommendations with regard to the ongoing protection and maintenance of the structure. The below is a summary of their findings and recommendations:

3.3.1 Visual inspection and hammer testing

A general repeating defect was noted at the base of the columns, at around 50mm above floor level where an apparent cold / day joint in the construction had provided a pathway for water ingress. Standing water was also encountered during the survey, as highlighted in Figure 3.

Figure 3 - Standing water present during CRL 2014 survey

The concrete pool walls exhibited extensive calcium carbonate residue and surface delamination. The delamination's were in places found to be around 20-25mm in thickness.

3.3.2 Condition of concrete

The depths of cover recorded were generally similar for the Main Pool, Training Pool and Plant Room areas and would generally not be considered as adequate when compared to the standards in force at the time of construction and would not be acceptable by those of today. Covers as low as 14mm were recorded in some locations, particularly to soffits around both pools.

The depths of carbonation recorded were also generally similar for all areas surveyed and, in CRLs' opinion, were in excess of the expected range for average quality concrete of 50years of age. While the carbonation front had generally not yet encroached upon the reinforcement around the main pool, the relative depths of cover to the reinforcement and carbonation indicated that the carbonation front had encroached upon the reinforcement around the training pool with carbonation depths of up to 70mm noted in the pool wall.

The chloride ion contents were found to range from approximately <0.1% to 3.2% by weight of cement, recalculated from the determined % by weight of sample assuming a cement content of 14% by weight. There was no apparent difference in the results obtained from the concrete samples from the Main Pool, Training Pool and Plant Room areas and incremental sampling indicated that the concrete probably did not contain significant chloride as an original mix constituent i.e., was not cast in. However, in some areas, such as the training pool walls and the base of the columns under the spectator seating, the chloride levels were found to now be extremely high.

The profiles through the walls would suggest, at least in some places, that the chloride had penetrated through from the 'wet-side', i.e. exhibiting an increase in chloride with depth from the 'dry-side'. This indicates that chlorinated water is moving through the concrete wall of the training pool.

For concrete of this age, i.e. probably around 40years-old, with the carbonation front nearing or encroaching on the reinforcement, and containing 'ingressed' chlorides in varying proportions, BRE Digest 444 would suggest risk categories ranging from 'Negligible' to 'Extremely high' in terms of the potential for steel reinforcement corrosion. A classification of 'Extremely High' would indicate that severe corrosion of the reinforcement was inevitable with a significant area likely to be affected with continued corrosion of the reinforcement spreading from the currently affected areas. It was noted that the spread of distress in the future could be rapid.

The condition of the concrete is summarised in the below table, extracted from CRLs' report. Noteworthy results have been highlighted as **underlined bold** text. For explanation of the below table reference should be made to CRLs' report section 6.3.2.

Element	Minimum Depths of Cover to the Reinforcement, mm[23]	Maximum Depths of Carbonation, mm[24]	Chloride Ion Contents, % by weight of cement[25]		
			5 to 25mm	25 to 50mm	50 to 75mm
Main Pool Area					
Beam Face	22	10	0.5	0.7	0.6
Beam Soffit	15	20	1.1	0.3	0.1
Column	31 to 65	10 to 40	0.1 to 2.9	0.1 to 3.1	0.1 to 3.2
Perimeter Wall	44 to 61	5 to 40	0.1 to 2.7	0.1 to 1.1	0.1 to 0.9
Pool Wall	33 to 61	5 to 25	0.1 to 0.7	0.1 to 0.9	0.1 to 1.0
Soffit	18 to 20	5 to 20	0.0 to 1.1	0.0 to 0.6	0.1 to 0.3
Training Pool Area					
Beam Face	47	45	0.1	0.1	0.1
Column	29	50	0.2	0.2	0.4
Perimeter Wall	39	50	0.1	0.0	0.0
Pool Wall	19 to 47	15 to 70	0.1 to 1.2	0.1 to 2.6	0.1 to 3.6
Soffit	14 to 22	40	0.2	0.2 to 0.3	0.3

Table 1 – Extract from CRL's report in 2014 summarising the condition of the concrete in different elements

3.3.3 Recommendations

At the time of surveying, CRL made recommendations for potential rectification and repair work options, as outlined below in ascending order of protection level and associated complexity/cost. Estimated extensions to building service life were based on the building condition at the time of surveying (2014).

- Option 1 – 'Do Nothing'. This option could only be recommended if there were clear plans to replace the site with new facilities in the next 5 years. Repeat 'make safe' works would be required at least on an annual basis, and ideally biannually in the interim.
- Option 2 - Conventional Concrete Patch-Repair and Coating. This option was identified as being able to feasibly extend the life of the structure for another 5 years or more (to circa 2019+) before further repairs would be required.
- Option 3 - Conventional Concrete Patch-Repair and Coatings, augmented with Corrosion Inhibitors or Sacrificial Anodes. This option was considered the best compromise of cost and long-term maintenance. This option was expected to give a 10year period before further significant repair would be necessary (to circa 2024).
- Option 4 - Conventional Concrete Patch-Repairs and Cathodic Protection. This option is considerably more expensive than the other options but would offer a significant extension of life to the structure, in the region of 20-25 years before any further significant repairs would be required.

3.4 Arup Report – February 2021

As part of a wider, 10-year condition survey of leisure facilities managed by Celtic Leisure Services, Arup revisited Pontardawe swimming facilities in December 2020. This commission involved a building services, external works, building fabric and exposed structure non-intrusive condition survey.

3.4.1 Condition of structure

With regard to the building structure, several concerns were raised relating to the reinforced concrete frame, particularly in the basement plant area where four columns were highlighted as having suffered substantial section loss and corrosion of reinforcement since the previous, 2012, Arup survey. In addition, significant defects were also noted within the adjacent staircase area where concrete was spalling form the concrete soffits. Concrete was also noted as spalling from the pool tank walls, concrete soffits and external concrete

retaining walls. Whilst the integrity of these items was of less concern than the columns, all items were noted as requiring urgent repair, particularly the concrete soffits which are a potential Health and Safety issue due to the likelihood of falling material.

A full, comprehensive system of concrete repair, including repair or replacement of the affected reinforcement was noted as being required within 6 months of the report being issued.

Following this visit, NPTCBC installed further Acrow props in addition to those that had been installed in 2014.

3.5 Building Services Arup Report September 2012

Arup first attended to the property in 2012 and provided an estimated cost of refurbishment for large parts of the building services which included filtration systems, main electrical distribution and system components such lighting and fire systems. Building services such as the main heating plant including the boilers and controls still had an estimated efficient life cycle until 2020, but nonetheless costs were included for replacement plant. The estimated life cycle costing at that stage was based upon replacement of main plant assets and excluded system components such as pipework and cabling for mechanical and electrical systems.

3.6 Building Service Arup Report February 2021

On the Arup inspection during 2021, the physical condition of the building services had remained unchanged. The majority of the original electrical distribution system is now old, with distribution boards obsolete and no longer supported by the manufacturer.

A new water pool filtration and dosing system had been installed and also new Sand filters had also been installed, however this had been installed in front of the old equipment which was not removed as part of the refurbishment. The existing pipework was refabricated to fit the new installation resulting in the old sand filter being ‘boxed in’ and requiring significant investment to remove them.

At this point in the buildings service life cycle, most plant items have now significantly exceeded the indicative economic life expectancy and are of a condition where they are now recommended for refurbishment or replacement and investment required to ensure reliable continued operations and availability of the services supported.

Some investment was noted with replacement of some older ‘C’ type distribution boards, a reception refresh and works to the main swimming pool hall lighting.

4. Key Findings of 2022 surveys

4.1 Arup survey – July 2022

During the survey carried out in July 2022 there was clear evidence that the corrosion and deterioration of the structural concrete had continued since previous visits. It was also identified that additional 'make-safe' works are required in line with CRL's 2014 recommendations and that Acrow props were still being utilised to supplement the columns where significant section loss had occurred.

The structural deterioration is especially evident within the basement plant area. Items of particular concern are highlighted below:

- Significant increase to spalling at base of concrete columns in basement plant room – very large sections of spall were evident on the floor, as highlighted in item PS.01 in Appendix A. This loss of concrete cross section will have an impact on the load bearing capacity of the affected columns.
- General worsening of existing corrosion of reinforcement elsewhere has also led to increased concrete spalling/delamination/cracking of the other concrete elements previously highlighted. This has led to larger areas of exposed reinforcement, particularly on the external retaining walls, soffits and pool walls.

Areas around the smaller 'Training pool' were not accessed as part of the Arup survey due to being a confined space. Based on recommendations made following the Arup survey, CRL have since inspected these areas and the findings of their visit are included in section 4.2.

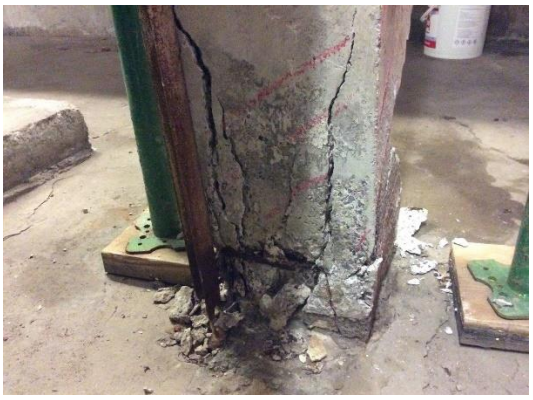
4.1.1 Progression of Concrete Degradation

The following images highlight the increase in concrete spalling and cracking and the increase in reinforcement corrosion that has developed over the past eight years between the NPTCBC 2014 survey and the most recent Arup 2022 survey.

The first images highlight the additional spalling and delamination that has occurred to the concrete columns within the basement. This has further exposed the reinforcement to the plant room environment which has accelerated its corrosion. Figure 4 and Figure 5 show the comparison over the full eight-year time period, between 2014 and 2022. Figure 6 and Figure 7 show the deterioration that has occurred over the past 18 months, since our last inspection in December 2021.

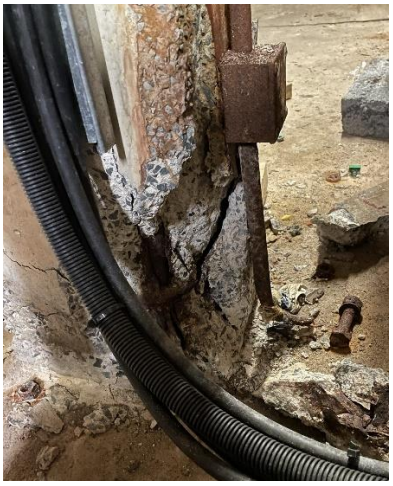
2014 **2022**

Figure 4 – Basement column spalling 2014 vs 2022 (Column B/2)



2014 **2022**

Figure 5 - Basement column spalling 2014 vs 2022 (Column B/4)



2020 **2022**

Figure 6 - Exponential degradation of basement columns 2020 vs 2022 with severe additional cracking (Column B/9)

2020 **2022**

Figure 7 – Exponential degradation of basement columns 2020 vs 2022 showing additional exposed, and corroding, reinforcement (Column B/4)

The degradation now appears to be increasing exponentially, as the comparison images show. Very large segments of concrete have recently spalled off. This not only reduces the cross-sectional area of the column and reduces its load bearing capacity/structural integrity, but also poses a health and safety risk.

Figure 8 below highlights the level of degradation in other areas since 2014, with increased areas/depth of delamination clearly evident on the pool walls. This delamination and spalling of concrete however is not only localised to the pool wall but is also observed in several other areas of the plant room such as the external retaining walls and the concrete soffits. In all cases this delamination will have an impact on the resulting integrity of the structure.

Figure 8 - Basement pool wall spalling 2014 vs 2022

In addition to the issues noted within the basement area, Figure 9 shows damage to the concrete structure at ground level. Here the concrete has spalled showing evidence of further deterioration of the concrete due to chlorides and/or carbonation in areas where this has not previously been identified.

Figure 9 - Concrete deterioration advancing into in new areas not previously seen prior to 2022

Finally, while not part of the scope of this inspection, significant cracking was observed to the rear masonry wall while undertaking the survey. Refer to item PS.06 in Appendix 1 for further information. This is likely due to corrosion of the steelwork lintels over the openings and requires further investigation and monitoring in the near future.

4.2 CRL survey – September 2022

As a result of the recommendations made in the 2022 Arup report, CRL was appointed by NPTCBC in September 2022 to undertake a further inspection of the area around the training pool. CRL were requested to carry out the following during their visit:

1. Visual inspection of the concrete to the crawl spaces around the training pool
2. Hammer testing, inclusive of existing concrete repairs
3. Assessment of the condition of the concrete
4. Check depth of cover to reinforcement
5. Carbonation testing
6. Chloride testing

It is noted that CRL were only commissioned to review the condition of the concrete around the training pool and, in their report, have not made any assessments as to the remaining robustness or strength of the structure. This overview is therefore provided to give an interpretation of CRL's findings with regard to the lifespan of the structure and the options for remediation.

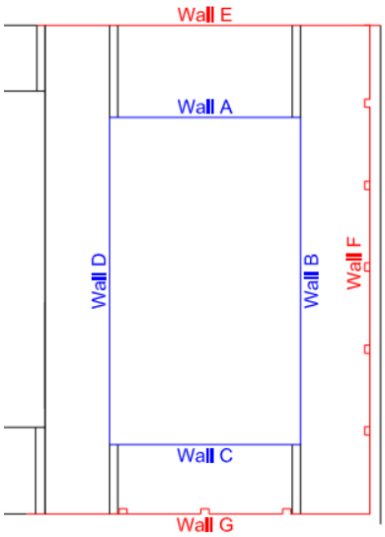


Figure 10 – Extract from CRL report showing identification of walls surveyed around the training pool

4.2.1 Visual Inspection

The structure was found to have deteriorated significantly since CRL's previous inspection in 2014.

Of the 146 defects noted in 2014, over one third had increased in size and 25 additional defects were recorded, an increase of almost 20%. Most additional defects were located at high level in Walls A, C, D and G with D and G being the worst affected (Figure 10). On wall E only one additional defect was found with no existing defects found to have extended. No additional defects were noted on Walls B or F although several existing defects had extended. The majority of defects that had increased in size were at low level on Walls A and F and at various levels on wall G as shown on Figure 11 below.

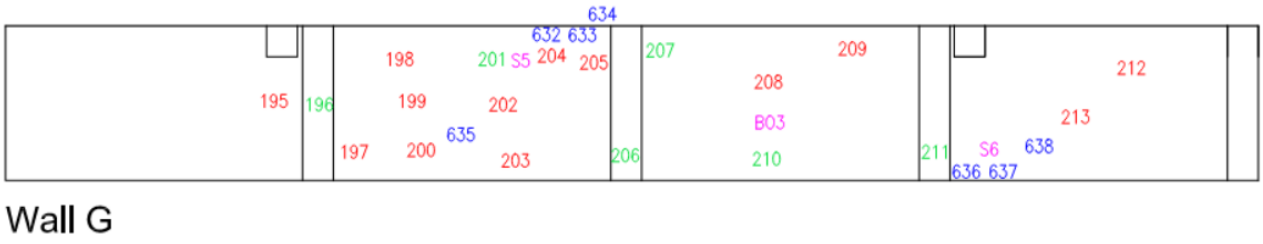


Figure 11 – Extract from CRL report showing defects on Wall G. Those in red are original. Blue are new defects and green are defects that have extended. Pink references refer to sample locations (B03, S5 and S6)

No new defects were found on the soffit of the slab around the perimeter of the pool however approximately 45% of the defects had extended since the soffit was last surveyed (see Figure 12).

Figure 12 – Extension of defects previously identified in 2014 survey

4.2.2 Hammer testing

The hammer testing identified significant areas of loose concrete (Figure 13) resulting in the extensions of existing defects or new defects noted above.

Figure 13 – Additional loose concrete, identified during hammer testing, marked in orange

4.2.3 Assessment of the condition of the concrete

Exploratory breaking out was undertaken in three areas around areas of spalled concrete to establish the extent of corrosion, the loss of section and the impact on the structural capacity. One breakout was undertaken in the soffit, one in the pool wall (D) and one in the external wall (F).

Of these three areas, the slab soffit is worst affected with 7mm of 16mm diameter bars being lost in both directions. This is the equivalent of approximately **68%** loss of capacity in the affected bars. It is not clear whether this is representative of findings elsewhere in the soffit but, based on the extensive spalling to the full perimeter of the pool, it is expected that this is not an isolated case. Bars were then chased up to 300mm further until clean and uncorroded steel was found.

Beam soffits were also found to be extensively distressed with significant corrosion and the potential for all cover to the soffit to be lost in the near future as shown in Figure 14.

Figure 14 – Extensive spalling to the soffit of a beam showing extensive corrosion and the potential for cover to be lost

In the walls a loss of section of 2-4mm was found in both breakout areas (23-64% loss in tension capacity of the bars depending on original bar size) with corrosion extending up to 350mm into the un-spalled concrete. In the case of vertical structure however arguably the loss of concrete due to spalling could be more significant due to the loss of compression capacity. In some places the concrete loss is extensive as shown in Figure 15 below.

Figure 15 – Photo from CRL report. This appears to be a column located on Wall G and demonstrated significant section loss

4.2.4 Depth of cover

The depths of cover recorded were as low as 16mm in this area (slightly greater than that noted in the CRL report in 2014).

4.2.5 Carbonation

In 2014 the carbonation depth tests showed that, in the majority of cases, the carbonation depth was greater than the depth of cover. The 2022 results show that the depth of carbonation has increased from a maximum of 50mm in 2014 to a maximum of 55mm (not including the training pool wall which we understand was not sampled on this visit). The slab soffit was found to have the worst carbonation depths on this visit (see

Table 2).

Table 2 – comparison of 2014 and 2022 cover, carbonation and chloride content results

Element	Min cover to reinforcement (mm)		Max depth carbonation (mm)		Chloride Ion contents % by weight of cement					
					5 to 25mm		25 to 50mm		50 to 75mm	
	2014	2022	2014	2022	2014	2022	2014	2022	2014	2022
Beam	47	48	45	**50**	0.1	0.1	0.1	0.1	0.1	0.1
Soffit	14-22	16	40	**55**	0.2	0.1	0.3	0.2	0.3	0.3
Column/Wall	29-39	26	50	50	0.2	**0.3**	0.2	**0.3**	0.4	0.4

Note: the above summary is based on tables from CRLs reports dated 2014 and 2022. It is important to note that the elements sampled may not be the same as those sampled previously, for example it is unlikely that the carbonation depth in the soffit has increased by 15mm in the last 8 years. Values that are higher than previous are highlighted in ***bold****.*

Based on the depths of cover found, the carbonation front has encroached on the reinforcement.

4.2.6 Chlorides

Following a discussion with CRL it is understood that the chloride sampling was carried out on the beams and columns around the training pool and no sampling was undertaken to the pool walls where the particularly high readings were recorded in 2014. This accounts for the lower readings (0.1-0.3% by weight of cement) recorded on this visit. Although not sampled, the chloride levels within the pools walls will not have reduced in the interim and the risk of further deterioration of these walls is inevitable.

As noted in the previous survey, sampling indicates that the concrete probably did not contain significant chlorides in the original mix and as such the chlorides are considered to be 'ingressed' chlorides which, being mobile, are more likely to cause corrosion than those that are bound in at the time of construction.

4.2.7 General findings

It is not surprising that the CRL reports highlights similar findings to that identified in 2014 with the potential for steel reinforcement corrosion ranging from negligible to extremely high in accordance with BRE Digest 44 risk categories.

The structure has further deteriorated since the 2014 survey. Following further conversations with CRL it is understood that the additional distress is significant, mainly due to carbonation-induced corrosion exacerbated by the presence of chlorides. Without maintenance and repair this will continue to spread, and the speed of distress could be rapid. Further damage is inevitable, potentially leading to failure.

4.3 Building Services Findings

There has been no significant investment or replacement of the building services since the previous 2021 survey. It is now considered that due to pressures on carbon reduction and energy efficiency and the need to comply with Welsh Government 'Prosperity for all' decarbonisation plans, that the building services should be fully refurbished, along with the building fabric improvements will provide significantly more energy efficient systems and improvement to the thermal performance and comfort of the building.

The majority of the building services remain as reported in 2012 and 2021 and have now in most cases significantly exceeded their indicative economic life expectancy and are likely to be obsolete and no longer readily supported by manufacturers or suppliers. Regulatory changes and advances in technology have left the building services assets behind, and much more efficient and compliant versions are available for selection should a refurbishment proceed. Controls within the basement are very antiquated and outdated and fail to provide the control, operation, and reporting that modern systems and analytic type platforms could offer.

There is noted increased corrosion to surface mounted services such as heat emitters throughout the facility. These appear to have deteriorated since the previous survey. Consideration should be given to the internal

parts of these systems where pipe and wall thickness may be deteriorating and presenting a significant risk of failure.

In the basement area there was evidence of surface water around the existing boiler plant which would be indication of a leak somewhere in the vicinity. The source of the water leak could not be identified during the survey and it would be recommended that this is resolved and the system water chemistry checked to ensure inhibitor and water chemistry levels have not been significantly diluted by fresh water being made up to the system.

Original dated switchgear remains throughout the building, especially within the basement area, including a number of old 'Crabtree C50' style distribution boards which are obsolete and no longer supported. A failure of one of these boards or breakers within it, will lead to a period of significant unavailability whilst a modification or replacement is made to restore supplies.

There was corrosion evident to electrical distribution equipment. It is unclear if this corrosion has occurred within the electrical contacts but given the corrosive atmosphere it is highly likely corrosion to internal parts have also occurred which will affect the performance of safety devices and presents a serious risk to operators and services. It is strongly recommended that intrusive inspection should be undertaken to confirm the condition of internal busbars, electrical contacts, and tripping functions of breakers and safety devices.

For a breakdown of the building services refurbishment costs, please refer to ***section 7.2***

4.4 Electrical Demand check

As part of the most recent survey, Arup requested half-hourly data for the previous 12 months so we could undertake a quick review of the electrical profile of the building and compare this with the incoming supply in terms of 'maximum demand'.

It is noted that despite the facility being open, demand for services has been greatly reduced since COVID and therefore the facility is not running to full expected, pre-COVID capacity.

Based upon the 12 month half hourly data received there is sufficient capacity in the main supply to cope with the peak maximum demand experienced based upon current use of the building.

The data below shows the peak maximum demand was 37kW which averaged out across the year to 24kW.

		Half Hourly Average	Indicative Hourly Average
		kW	kW
Over Year	Max	18.5	37
	Average	12.3	24.6
Day of Survey	Max	13	26
	Average	10.3	20.7

5. Discussion & Options

As evidenced by the findings of the most recent surveys, there has been significant deterioration of the structural concrete in columns, pool tank walls, concrete soffits and external concrete walls since the previous inspections. The concrete is now deteriorating at what appears to be an exponential rate, particularly to the base of the concrete columns and around the training pool. Further deterioration will occur if not addressed. In addition, the repairs carried out by CRL in 2014 are in poor condition and beginning to break away.

There is low cover to reinforcement in many areas with carbonation depths of up to 55mm recorded. The carbonation front has encroached on the reinforcement in most elements.

The deterioration evidenced on the recent visits by both Arup and CRL is structurally significant. The intrusive survey around the training pool, carried out by CRL identified that, in some isolated breakout areas almost 70% loss in reinforcement capacity had occurred. It is not clear whether this is representative of all structural elements; however, based on the extensive spalling to the full perimeter of the training pool, it is clearly not an isolated case.

There is also an indication, at ground floor level, that the issues, previously confined to the basement, could be spreading into different areas of the structure with evidence of concrete spalling to one of the columns adjacent to the pool. This is a potential indication that the chlorides and carbonation are beginning to affect the concrete elsewhere in the building leading to further degradation and loss of structural capacity.

Deterioration of the reinforcement will continue due to the depth of carbonation, and this will be exacerbated in areas with elevated chloride content. In some areas, particularly around the training pool, extremely high levels of chlorides were identified which means that these elements are considered to have an ‘extremely high’ risk classification. An ‘extremely high’-risk classification would indicate that severe corrosion of the reinforcement was inevitable with a significant area likely to be affected, with continued corrosion of the reinforcement spreading from the currently affected areas. It is worth noting that the corrosion associated with high chloride content tends to lead to rapid loss of reinforcement that is not necessarily manifested outwardly, i.e., there is a potential for significant reinforcement loss to have occurred without any damage to the concrete surface.

Due to the ongoing deterioration of the concrete and the extensive section loss identified to the soffit and some other areas, it is recommended that the building does not remain in use without propping or significant structural repairs being undertaken urgently.

If propping or repair works are not carried out immediately, advancing corrosion will further degrade the concrete frame which is already exhibiting significant deterioration. Additional spalling will not only pose a health and safety risk from loose concrete but could also lead to further loss of structural capacity of the affected elements and hence the structural integrity of the building.

While Acrow props have been installed to the worst affected columns (first props installed in 2014 with further props added in 2021), they do not have the required structural integrity to be used as anything other than a temporary solution. Acrow props are a simple vertical prop which, while effective at propping vertical loads, will not perform the same function as the original reinforced concrete column as they are not designed to resist any horizontal or dynamic loads. It is therefore recommended that an alternative temporary bracing system is designed and installed by a temporary works specialist until a full structural repair of the affected elements can be undertaken.

Options for refurbishment, discussed below, include those highlighted within the CRL report, augmented with a note regarding the potential for undertaking conventional concrete patch repairs. It is noted that the remediation options summarised in Annex II of the most recent CRL report are generic options and many will not be suitable for the extent of distress exhibited around the training pool. We also note that CRL’s ‘make-safe’ option is only to reduce the risk of falling debris. **This option and the options noted below do not reinstate any lost structural capacity and offer no assurance of ongoing structural safety. Furthermore, it will not prevent the structure from further deterioration**. It is recommended in the CRL report that careful monitoring by a Structural Engineer is also required.

- Option 1 – 'Do Nothing'. This option is no longer recommended as the structure has deteriorated to such an extent that the structural capacity and hence integrity has been compromised. Should it be decided to replace the facility then regular 'make-safe' works including de-scaling and additional propping (where deemed necessary) will be required to allow the building to be maintained in a safe state until demolition.
- Option 2 - Conventional Concrete Patch-Repair* and Coating. This option could potentially be used in areas of lesser degradation. This option would only give a limited (circa 5 years) extension to the life to the areas treated in this way.
- Option 3 - Conventional Concrete Patch-Repair* and Coatings, augmented with Corrosion Inhibitors or Sacrificial Anodes. This option, as for option 2, is an option for areas of lesser degradation and was previously considered the best compromise of cost and long-term maintenance.
- Option 4 - Conventional Concrete Patch-Repairs* and Cathodic Protection. This option is considerably more expensive than the other options but could offer a significant extension of life to some parts of the structure before any further significant repairs would be required. Ongoing inspection and maintenance would be required at regular intervals.

* Conventional Concrete Patch-Repairs could only be used in areas of lesser degradation and would not be suitable for areas exhibiting significant concrete section loss and advanced reinforcement corrosion. Based on the findings of the most recent CRL report and a further discussion with CRL, it is clear that this 'simple' maintenance and repair option, is no longer suitable for the worst affected areas. The extent of spalling and distress, particularly to the columns adjacent to the main pool and the soffits around the training pool is such that a full structural repair/replacement, defined as the removal of all chloride contaminated concrete in contact with the steel, the cleaning and treatment of the reinforcement (or splicing of new reinforcement if required) and the reinstatement of the concrete, is now required rather than surface/aesthetic repairs.

It is noted that any concrete not replaced could have high levels of chlorides. It is also noted that in many areas the carbonation front is encroaching on the reinforcement if not already reached. Anti-carbonation coatings or cathodic protection, potentially at significant cost, will therefore be required to the remainder of the structure to comprehensively extend the life of the existing facility.

If NPTCBC wishes to continue to use the facility until a full replacement and repair programme is commenced, immediate action will be required, in the form of a propping scheme developed and installed by a temporary works specialist. It is likely that the following will be required to extend the life by up to two years:

- Vertical propping to beams and slabs around the perimeter of the training pool
- Propping to external retaining walls around training pool
- Vertical and horizontal propping to columns below spectator seating adjacent to main pool (refer to main report for justification)
- Inspection of both pool structures by suitably qualified personnel at 6-month intervals to identify any significant deterioration or modifications required to the temporary supports

The buildings services need investment and refurbishment/replacement to take advantage of more efficient systems, improve energy efficiency and control over the systems especially given the current energy cost crisis and financial pressures.

Based on the risks noted above relating to the structural concerns, it is not considered economically viable to refurbish the worst affected areas. Costs have therefore only been given for those areas where conventional concrete patch repairs are suitable. In other areas, such as the training pool and basement columns, where extensive degradation has, or is likely to have, occurred, in our opinion it would be more economical long term to replace with new.

Finally, while outside the scope of this review, significant cracking was observed to the rear masonry wall while undertaking the survey. This is considered likely due to corrosion of the lintels. It is recommended that monitoring and further investigations as to the cause of this are carried out within the next 6 months.

6. Structural Risk Assessment

The below risk assessment has been carried out in accordance with Arups' Health and Safety Management System Procedure and uses a 3x3 risk matrix to give a simple visible representation of the risk profile associated with the condition of the concrete structure around the two pools. This assessment does not replace the need for the owner/operator to carry out their own risk assessment in relation to the continued use of this facility.

The following tables provide a key to the likelihood of harm and the severity of potential harm:

Table 3 – Potential Severity of risk

Minor (Mi)	Minor injury or illness not requiring medical attention
Moderate (Mo)	Injury or illness requiring medical attention and/or short-term absence from normal activities (less than seven days).
Significant (S)	Injury or illness requiring long term absence from normal activities (more than seven days), permanent disability, or fatality.

Table 4 – Likelihood Severity Occurs

Unlikely (U)	An improbable or rare combination of factors required for occurrence.
Likely (Li)	Expected to happen.
Very likely (VL)	Almost inevitable that an incident would occur.

The ratings selected from the above tables are subjective and based on the information provided. While the consequences and severity of failure would clearly be Significant (S) in line with Table 3, the likelihood is less certain and difficult to quantify (Table 4). The ratings selected are then used in the below matrix to establish the residual risk

Table 5 – Risk Matrix

Likelihood	Minor (Mi)	Moderate (Mo)	Significant (S)
Very Likely (VL)	Medium	High	High
Likely (L)	Low	Medium	High
Unlikely (U)	Low	Low	Medium

Severity

Table 6 – Residual Risk Categories

Residual Risk	Action
Low (L)	**No action required:** Continue as normal
Medium (M)	**Action required:** Activity **must not take place until** further controls have been considered and implemented where practicable.
High (H)	**Action required:** Activity **must not take place**. Further action is required; additional control measures must be implemented, and activity can **only** continue when the additional controls reduce the residual risk rating to medium or low.

6.1 Risk assessment for Training Pool (unpropped)

The below considers the current condition with the main pool having vertical Acrow props under the spectator seating area and the training pool being unpropped.

Table 7 – Risk assessment for current condition of both pools

What are the hazards relating to the location/environment?	Who might be harmed and what is the risk?	What are the control measures?	Residual risk rating		
			Likelihood	Severity	Risk
Potential collapse of slab around training pool due to the condition of the concrete and the environment it is exposed to.	Staff, parents and children moving around the edge of the pool.	Consider temporary propping of training pool soffit until full structural repairs can be undertaken	U-Li	S	M-H
Potential collapse of training pool tank walls, or external retaining walls around training pool, due to the condition of the concrete and the environment it is exposed to.	Staff, parents and children in the vicinity of the pool	Consider temporary propping of training pool tank walls and external walls until full structural repairs can be undertaken	U-Li	S	M-H
Potential collapse of spectator seating area around main pool	Parents, Staff and Children watching those in the main pool	Propping already installed – Consider enhancing propping to take lateral and horizontal forces and monitor at 3 monthly intervals.	U	S	M

6.2 Risk assessment for Training pool if propped

The below considers the residual risk associated with the training pool once propping has been installed.

Table 8 – Risk assessment for proposed condition of training pool (propped)

What are the hazards relating to the location/environment?	Who might be harmed and what is the risk?	What are the control measures?	Residual risk rating		
			Likelihood	Severity	Risk
Potential collapse of slab around pool due to the condition of the concrete and the environment it is exposed to.	Staff, parents and children moving around the edge of the pool.	Monitor propping to underside of soffit and condition of soffit (where visible) at 3 monthly intervals.	U	S	M
Potential collapse of pool tank walls or external retaining walls due to the condition of the concrete and the environment it is exposed to.	Staff, parents and children in the vicinity of the pool	Monitor propping to retaining walls and condition of walls (where visible) at 3 monthly intervals.	U	S	M

7. Costs

7.1 Structural

In our opinion, when considering the recent findings, the magnitude of structural repairs required to extend the life of the existing building significantly (say 15-20 years) is extensive, particularly around the training pool. It is therefore recommended that this pool is replaced, particularly the main pool tank and the surrounding slabs.

Based on an assumption of approximately 2m height around the main pool:

- Total area of walls, columns and soffit requiring de-scaling, structural repair and anti-carbonation coating – approximately 800 sq. m
- Total area of concrete requiring recasting – approximately 1.5 cu. m
- Replacement of training pool and surrounding slabs
- The total costs for the structural repairs, anti-carbonation coating and re-casting (where appropriate) will be significant, and it is recommended that a whole life costing exercise is undertaken by an independent cost consultant.
- It is estimated additional costs of £15-20k per year will also need to be allowed for ongoing inspection of the structure. Ongoing maintenance costs would need to be assessed following each inspection (at recommended 3 monthly intervals).

7.2 Building Services Refurbishment Costs

This section of the report provides an estimated refurbishment cost for replacing the M&E building services which was requested by the NPT M&E team as part of the building services survey. It does not cover any costing element associated with the structural repairs and is on the basis that the building structure is as existing.

The M&E budget costs excludes lifts, utilities services and professional fees and is based upon rates identified from within SPONS Mechanical & Service Price Book 2022.

The basis of the proposed costs is undertaking a complete refurbishment including the removal and disposal of all existing services including the redundant sand filters.

The basis of the proposed new refurbished facility is central plant within the basement plant rooms. The proposal includes for air source heat pump, Air Handling Units (AHU) providing ventilation to both the main pool hall and small pool area, services provided also include for a 4 pipe Fan Coil Units (FCU) providing heating and cooling, displacement ventilation to the pool hall, additional underfloor heating to changing rooms. The cost model also includes for steam room and sauna facilities.

Service	Budget Cost
BMS & Controls	£47,300
Sanitary – Sanitary appliances, urinals, WC's wash hand basins	£269,703
Disposable Installations – Soil stacks, waste vents for sanitary	£86,305
Water Installations – Mains cold water services	£152,831
Heat Source – Connection to heat exchanges etc	£251,722
Space Heating & Air Conditioning – Air source heat pumps	£1,492,355
Ventilation – Main Intake & exhaust supply 7 extract	£314,653
Electrical Distribution – LV distribution Switchgear new Tx Small Power	£809,108

Fire & Lightning Protection	£80,910
Comms , Security Access control, CCTV	£764,158
Specialist Installations – Sauna & Steam room facilities	£1,169,830
Total	**£5,438,875**

7.3 General

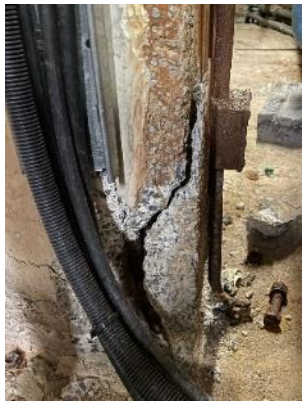
When the extent of the concrete deterioration is considered alongside the building services and facade repairs/replacement previously identified, the repair and refurbishment of this building is likely to be cost prohibitive when compared to the cost of providing a new facility.

It is therefore recommended that a whole life costing exercise is undertaken by a cost consultant prior to undertaking any significant repairs, particularly as economically viable repairs are unlikely to give a significant extension to life of the facility considering the level of contamination and the environment.

Appendix A

Structural Survey Findings

The following is a summary of the most critical items from the Arup 2022 structural concrete condition survey

Item Ref	Survey location	Photo	Comments	Remediation required
PS.01.	Basement | Plant Room	   	Column reinforcement exposed. Severe spalling / delamination / cracking of concrete. Very large chunks of loose concrete spalling. Health and safety risk from loose concrete. Loss of cross-section and reduction in column load bearing capacity. Additional Acrow props have been installed adjacent to worst case affected columns.	Affected structure to be removed back to sound concrete. New reinforcement to be spliced in and column re-formed to original dimensions.

PS.02.	Basement | Plant Room		Concrete spalling and exposed reinforcement to soffit.	Lose concrete to be removed. Exposed reinforcement to be cleaned, painted and concrete repaired using a proprietary repair product.
PS.03.	Basement | Plant Room	 	Damage to concrete pool walls, spalled/delaminated concrete and some exposed reinforcement.	Loose concrete to be removed, Exposed reinforcement to be cleaned, painted and concrete repaired using a proprietary repair product.
PS.04.	Basement | Plant Room & Poolside Slab	 	Concrete beam in plant room with significant build-up of surface deposits beneath an area of defective / disrupted tiling on the poolside slab, with missing pointing / jointing. Evidence of longstanding historic leak and water ingress from above.	Repair defective tiling / pointing, check water tightness of repair. Remove surface deposits from beam and clean. Repair where necessary.

PS.05.	Above Ground Floor Level Concrete Frame	 	Evidence of water ingress due to roof leaks which, if not addressed, will continue to degrade the concrete.	Urgent repairs required to roof/eaves/windows to prevent ingress of water leading to further structural damage.
PS.06.	Building Envelope	 	Whilst not strictly covered by this concrete condition report, significant cracking to the masonry was noted during a walk over externally. As evidenced by the photographs, the brickwork above the openings on the rear elevation 'appears' to have raised. This could be the result of steel lintels expanding due to corrosion. Further investigation and monitoring of this is recommended.	Carry out investigation into potential cause of movement and monitor the extent of movement through crack monitoring devices.

Appendix B

Summary of Building Services findings 2022

Robert Jenkins
Arup

PONTARDAWE SWIMMING POOL

revisit to assess condition for refurbishment

Tuesday, 5 July 2022

Prepared For Neath Port Talbot Council

18 Issues Identified

CORROSION OF M&E SERVICES FIXTURES & FITTINGS

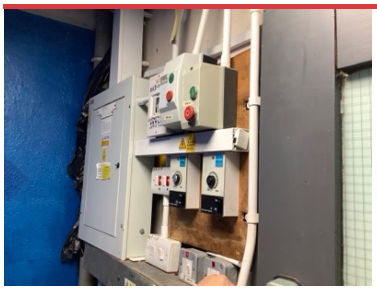
General corrosion to fixtures and fittings within swimming and changing room pool areas

SMALL POOL LIGHTING

Upstairs on roof supporting extract fans are corroded and are in the process of being repaired

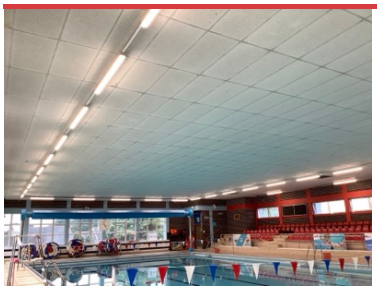
LEARNER POOL

Learner pool or Small swimming pool area has nnothing done to area



LEARNER POOL ELECTRICAL SERVICES DB

Small pool electrical system DB replaced a number of years ago, existing older wiring



POOL LIGHTING

Pool lighting replaced around 4 years ago

INDOOR POOL SERVICES AREA DB REPLACEMENT

Main do pool trae replaced 4 yo 5 years ago when pool lighting renewed

New wiring but installation still had old pvcpvc cabling

EXISTING CLADDING & INSULATION

General comment the amount if work involved to insulated the building and upgrade the fabric to realise energy or operational payback is extreme

OLD ELECTRICAL ISOLATORS

Old mem isolators and controls for water circ pumps

WATER CIRCULATION PUMPS

OLD REDUNDANT SAND FILTERS

Old sand filters been left in place very difficult to extract

Old pipe work has been capped and would require the pipe work to be relocated to assist removal

EXISTING AIR HANDLING UNIT

Expired no heat recovery badly corroded

ISSUE 12 OLD DISTRIBUTION BOARDS

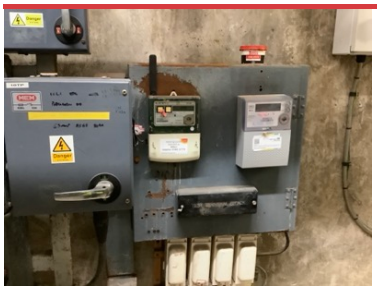
Still older Crabtree C5 type distribution boards. Beyond economi

ISSUE 13 BOILER PLANT

Leaks on floor around boiler

POOL FILTRATION SYSTEM

Pool filtration system replaced a number of years ago. Local staff happy with system and support provided by specialist contractors. System is provided by a Company located in Belgium



MAIN INCOMING SERVICE

Badly corroded check load profile to see if electrical demand of property is with limits.

Refurbishment may require main supply cable upgrade to external transformer.

MAIN SWITCH GEAR

Beyond life cycle requires upgrading

EMERGENCY STOP BUTTON FOR SMALL SUPPLY AHU

Emergency stop is an isolator and not a push switch. Should be replaced to push button type.

ROOF MOUNTED EXTRACT FANS

Upstairs on roof, the supporting structures around the extract fans are corroded and are in the process of being repaired

Appendix C

Arup Report 2021

Neath Port Talbot County Borough Council

Celtic Leisure Services

Pontardawe Swimming Pool Condition Survey Report

Issue | 19 February 2021

Job number 278278

Ove Arup & Partners Ltd
4 Pierhead Street
Capital Waterside
Cardiff CF10 4QP
United Kingdom
www.arup.com

ARUP

Document Verification

ARUP

Job title		Celtic Leisure Services			**Job number** 278278
Document title		Pontardawe Swimming Pool Condition Survey Report			**File reference**
Document ref					
Revision	**Date**	**Filename**	Structures and Facade draft report.docx		
Draft 1	6 Nov 2020	**Description**	First draft		
			Prepared by	Checked by	Approved by
		Name	Nikki Stockbridge	Colin Roberts	Robbie Jenkins
		Signature			
Issue	19 Feb 2021	**Filename**	Pontardawe Swimming Pool Building Fabric & Building Services Condition Survey Report.docx		
		Description			
			Prepared by	Checked by	Approved by
		Name	Robert Jenkins	Rick Davis	Dave Pitman
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
				Issue Document Verification with Document	✓

Contents

1 Executive summary

The swimming pool was originally built and opened in 1974. The lower, reinforced concrete level houses the basement plant area around the walls of the main pool. The upper storey houses two indoor swimming pools, changing rooms with showers, w/c facilities and main reception desk with supporting administration offices and stores.

The cladding is a mixture of metal sheet cladding and traditional brick construction.

Arup previously surveyed the building in 2012.

In terms of the building structure there are several concerns relating to the reinforced concrete frame, particularly in the basement plant area where a number of columns have significant section loss and corroding reinforcement. Although a temporary solution, using Acrow props has been adopted, it is recommended that a comprehensive repair, including cleaning and painting, or replacement, of exposed reinforcement is undertaken to all affected columns in the near future. Concrete is also spalling from the pool tank walls, concrete soffits and external concrete retaining walls. Whilst the integrity of these items is of less concern, all are to be repaired in the short term, particularly the concrete soffits which are a potential Health and Safety issue.

Elsewhere in the building, some refurbishment has taken place to the reception area and associated offices however, many of the issues highlighted in the 2012 report are still evident in the pool halls, back of houses spaces and externally and have deteriorated further as would be expected. It is recommended that these items, including ceiling and flooring replacement, window and glass replacement and general decoration are now addressed to avoid further deterioration.

In line with recent guidance from CIBSE, we recommend a review of the ventilation and control set up should be undertaken in line with guidance provided by CIBSE in 2020 issued in relation to COVID-19.

Following the declaration by the Welsh Government to declare a Climate Emergency in 2019 and commit to achieving Carbon Neutral within the public Sector by 2030 alongside an Environment Act and “A Low Carbon Wales” roadmap which puts a greater emphasis on achieving zero carbon targets in existing buildings, the recommendations made for refurbishment of systems have be based upon actions required by these Acts.

The building services have remained largely untouched since 2012 and as a result the main electrical and mechanical services are now in need of a major refurbishment. Some services within the basement plant room have also suffered from corrosion in parts due to the chemical atmosphere and where there have been leaks to various sparts of the pipework systems which in turn have affected the electrical services and have badly corroded.

Where newer pool equipment and sand filters have been in stalled in recent years, older plant has just been left in position and this should be considered for total

removal to aide access for maintenance and provide better housekeeping within the basement plantroom.

Within the pool area the perimeter heating grilles are damaged in most places and there is evidence of corrosion to the older radiators around the pool and changing room facilities.

.

Prosperity for All: A Low Carbon Wales

In March 2019, Welsh Government published their decarbonisation plan for Wales, Prosperity for All: A Low Carbon Wales[1]. It sets out 100 policies and proposals to reduce emissions and support the low carbon economy.

This includes a chapter on Buildings including the non-domestic buildings in the public and commercial sectors and highlights that the majority of the emissions in this sector are related to how much energy is used to heat our buildings.

Environment Act

The Environment (Wales) Act 2016 provides a framework for sustainable natural resources management. The Act aims to "promote sustainable management of natural resources" (Welsh Government, 2016) and seeks to enable Wales' resources to be managed in a more proactive, sustainable and joined up way.

The Act puts in place statutory greenhouse gas emission reduction targets and carbon budgets to support their delivery, these targets and initiatives help set a clear path for decarbonisation. The Act also defines charges for carrier bags, measures for the collection and disposal of waste, fisheries licensing information and regulatory regimes for flood risk management and land drainage.

[1] Welsh Government (2019) *'Prosperity for All: A Low Carbon Wales'*. Available at: https://gweddill.gov.wales/docs/desh/publications/190321-prosperity-for-all-a-low-carbon-wales-en.pdf

A summary of items to be addressed within the next 10 years is as follows:

Short term items < Urgent within 6 Months (priority rating 1)

- Comprehensive reinforcement and concrete repair to a significant proportion of the basement plant area, particularly the concrete columns and soffits that are spalling.
- Comprehensive reinforcement and concrete repair to the slab soffit in the staircase to the basement plant room.
- Removal of the older pool water systems & treatment plant
- Review Air Handling Systems and control set points.

Medium term Essential items- 2 to 5 years (priority rating 2)

- Comprehensive reinforcement and concrete repair to concrete pool tank and perimeter retaining walls
- Replacement of steel louvre doors to plant space
- Re-instatement of failed glass units
- Refurbishment of store off learner pool where ceiling and walls aer in particularly poor condition.
- Refurbishment of the electrical systems throughout
- Refurbishment of the heating services
- Refurbishment the mechanical ventilation services throughout.

Long terms Desirable items 5 to 10 years (priority rating 3)

- Multiple items including re-decoration throughout, replacement of ceiling tiles, replacement of single glazed steel windows, replacement of tiling around pools and changing areas and external repairs. Refer to schedule in section 5 for further details.
- Upgrade Lighting to LED

2 Introduction

Arup have been appointed by Neath Port Talbot County Borough Council to undertake a 10-year life cycle survey of leisure facilities managed by Celtic Leisure Services.

This commission involves a building services and building fabric condition survey of Pontardawe Swimming Pool. This survey was conducted on Thursday 3rd December 2020 and involved a non-intrusive survey of the building services throughout the building. The weather was cold but mainly dry.

Arup previously undertook this same commission in 2012.

This report assesses the condition of the main building fabric elements, the external works (car parks, access, circulation areas) and any visible structure.

The location of the building and the associated external area are indicated on the below site plan.

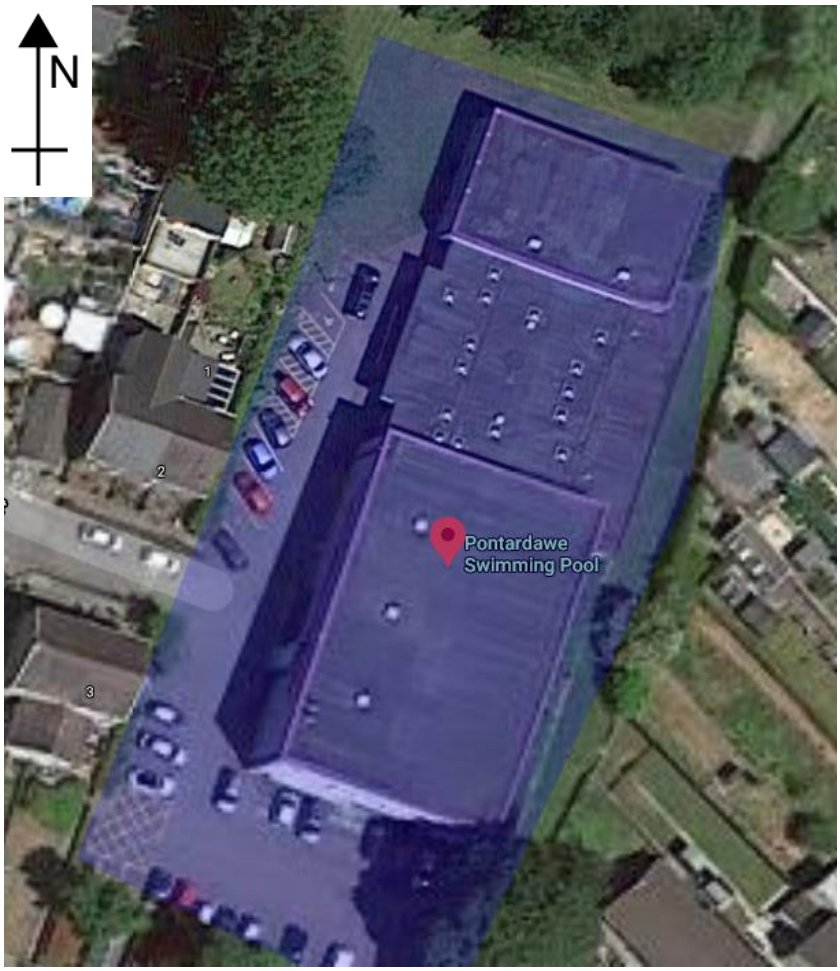


Figure 1 - Aerial view of Pontardawe Swimming Pool (Google maps image) with area reviewed highlighted in blue.

The survey did not involve the use of access equipment other than fixed access ladders and equipment installed at each of the premises. All exposed surfaces of

rooms have been inspected as far as reasonably practicable but from floor level only. No inspection of underground drainage has been undertaken.

The finishing's, fittings and structure of the building have not been disturbed during the survey and no responsibility can be accepted for any defects that were concealed during our inspection.

DDA compliance items have also been excluded from the fabric survey.

2.1 Life Cycle Costing

The basis of the life cycle model for the mechanical and electrical assets are:

(i) CIBSE (Chartered Institute of Building Services) economic life factors. The economic life factors are provided in *Guide M – Maintenance Engineering and Management*.

(ii) *Standardised Method of Life Cycle Costing for Construction Procurement*.

The life expectancy of mechanical and electrical assets can be considered as a probability distribution. In selecting a life expectancy, a single replacement year has been chosen which lies within a prescribed range for a particular asset. This period is dependent on manufacturing quality, utilisation, maintenance and loading. In preparing the life cycle costing, all of these factors have been considered in relation to setting a revised life expectancy from that of the original data.

Once the life expectancy is assessed, the provision of funds necessary for replacement will be assigned by determining the replacement costs and intervals for each of the assets.

The estimated costs for replacement of assets are based upon *SPONS Mechanical and Electrical Services Price Book* (2012 edition updated to 2020 costs). This provides costs for measured works based on materials and labour hours based upon average prices on a fixed price basis for typical buildings. These costs have been considered and amended in the light of Arup's knowledge of the building and services, particularly with regard to the difficulties in replacing equipment in an existing building.

The costs exclude any project management or procurement processes.

Prosperity for All: A Low Carbon Wales

In March 2019, Welsh Government published their decarbonisation plan for Wales, Prosperity for All: A Low Carbon Wales[2]. It sets out 100 policies and proposals to reduce emissions and support the low carbon economy.

[2] Welsh Government (2019) *'Prosperity for All: A Low Carbon Wales'*. Available at: https://gweddill.gov.wales/docs/desh/publications/190321-prosperity-for-all-a-low-carbon-wales-en.pdf

This includes a chapter on Buildings including the non-domestic buildings in the public and commercial sectors and highlights that the majority of the emissions in this sector are related to how much energy is used to heat our buildings.

Environment Act

The Environment (Wales) Act 2016 provides a framework for sustainable natural resources management. The Act aims to "promote sustainable management of natural resources" (Welsh Government, 2016) and seeks to enable Wales' resources to be managed in a more proactive, sustainable and joined up way.

The Act puts in place statutory greenhouse gas emission reduction targets and carbon budgets to support their delivery, these targets and initiatives help set a clear path for decarbonisation. The Act also defines charges for carrier bags, measures for the collection and disposal of waste, fisheries licensing information and regulatory regimes for flood risk management and land drainage.

3 Key findings

Although some areas, such as the main reception have been renovated since the previous inspection there are still several significant issues identified during this inspection including lack of structural integrity, potential health and safety concerns and general refurbishment requirements.

The key priorities are included in the following sections however are summarised below for clarity:

3.1 General findings

- Concrete repair – the reinforced concrete structure, particularly that visible within the basement plantroom is in poor condition with multiple significant spalls and exposed, corroding, reinforcement. The columns are in particularly poor condition and a short-term measure, using Acrow props, has been installed to support the structure over. However, there is concern regarding the capacity of these props and the ongoing deterioration of the concrete columns. Comprehensive concrete repair, including treatment or replacement of the affected reinforcement is required to columns, walls and soffits. The repair of the columns and soffits, in particular, are to be considered high priority.
- Corrosion – External steel doors, particularly the louvres to the basement plantroom, have high levels of corrosion and require replacement.
- Windows – A number of glass panes have failed, either by cracking or through interstitial condensation and require replacement. In addition, the

steel framed single glazed windows around the main entrance are in poor condition and consideration should be given to replacing these windows.

- Internal redecoration – Although the main reception area has been refurbished since the previous survey, a number of areas, in particular 'back-of-house' areas and the pool halls have not been addressed. Several areas of high damp were identified during the survey. These are to be investigated further, repaired and redecorated.
- Internal finishes – As per the redecoration, finishes, particularly within 'back-of-house' areas, are stained, damaged or missing. Many ceramic tiles around the pools and in the changing areas and wc's were also found to be cracked. A full schedule of repairs to ceilings, floors and walls is now required to the majority of spaces.
- External works – A number of items were identified in the previous, 2012, survey. The majority of these findings have not been actioned and, as such, the items have degraded further in the intervening years. Repairs are required to perimeter fences and external surfaces and vegetation is to be cleared.
- All electrical, mechanical and buildings services should be considered for major refurbishment.

3.2 Condition and priority rating

3.2.1 Condition Code Categories

Each element of the buildings condition survey has been given a condition code, based on the recommendations of the surveyor as summarised below:

Condition Code	Description
A	As New
B	Sound operationally, safe and exhibits only minor deterioration
B/C	Good Condition, Operational but repair or remedial work required
C	Exceeded functional life, considers long term replacement.
D	Inoperable or significant risk of failure or breakdown. Or item is non-compliant.

Table 1 - Condition Code Categories

3.2.2 Priority Categories

Each element of the buildings condition survey has been given a priority category, based on the recommendations of the surveyor as summarised below:

Priority Category	Description
5	No work required
4	Long term work; 10 year plus
3	Desirable work (within 5-10 years)
2	Essential work (within 2-5 years)
1	Urgent work (within 6 months ideally)

Table 2 - Priority Categories

The following section details the most serious findings (condition codes D and C) in more detail. Part 5 of this report provides details and photographs for all works required within the next 10 years (priority categories 1, 2 and 3).

3.3 Specific D ratings

Due to the nature of D-rated items, all of these are considered urgent (priority code 1) and as such should be addressed within the next 6 months.

For Pontardawe swimming pool, the D rated items relate to the condition of the reinforced concrete in the basement plantroom and adjacent staircase area.

A full, comprehensive system of concrete repair, including repair or replacement of the affected reinforcement should be considered as a matter of urgency. The condition of the concrete in these areas has deteriorated significantly since the previous survey undertaken in 2012.

Review Air Handling and Ventilation Equipment set points and control philosophy.

3.4 Specific C ratings

As C rated items are considered to have exceeded their functional life, these require remediation urgently or, at the very least, within the next 2 years (priority code 1 or 2).

Location	Finding	Remediation
Basement | Plant Room	Damage to concrete (pool) walls, spalled concrete and some exposed reinforcement	loose concrete removed, reinforcement to be cleaned, painted and concrete repaired
	Steel louvres severely corroded.	To be cleaned and repainted or replaced

Location	Finding	Remediation
	Concrete spalling and exposed reinforcement to soffit	Steel to be cleaned, painted and concrete repaired.
Ground Floor | Main Pool	One cracked pane. Likely thermal crack	IGU to be replaced
	Couple of IGUs failed - interstitial condensation	IGU to be replaced
Ground Floor | Store off Learner pool	Serious damp and flaking paint.	Damp to be investigated and remediated. Re-decorate
	Ceiling tiles in poor condition.	Replace ceiling tiles
	Glass units failed - interstitial condensation	IGUs to be replaced
Throughout	Refurbishment of the electrical installation throughout	To be refurbished
Throughout	Refurbishment of Heating services and controls including heating distribution	To be refurbished
Throughout	Mechanical ventilation systems	To be refurbished

4 Costs

As noted from the previous sections a number of remedial measures have been identified. For simplicity, estimated budgets have been allocated against each of the general findings (e.g. redecoration) and an allowance also allocated for picking up all of the other items not included in the general list.

The estimated costs are based on todays prices and do not account for inflation or VAT. It is assumed that many of the small repair items will be undertaken through the facilities management team and will therefore not be subject to main contractor prelims. Regular maintenance, such as cleaning drains and gullies etc. have not been priced.

4.1 Concrete repair

These works include removing loose concrete, painting or replacing exposed reinforcement and repairing the concrete to a number of items including walls, soffits and columns.

It is recommended that an allowance of **£75,000** is made to for the concrete repair works.

4.2 Internal redecoration

These works include redecorating a number of walls as well as door frames, doors, skirtings and cills to areas that have not been recently refurbished. It also includes investigation of damp areas and a small allowance for remediation.

It is recommended that an allowance is made of **£7,500** for these works.

4.3 External works

These works include repairs to potholes and kerbs, maintaining and repairing surrounding fences and removing vegetation.

It is recommended that an allowance is made of **£5,000** for the external works.

4.4 Internal finishes (ceilings and carpets)

These works include the replacement of several demountable ceilings and also the replacement of a significant proportion of wall and floor tiles around the pool halls and in the w/c and changing areas.

It is recommended that an allowance of **£45,000** is included for these works.

4.5 Glazing

These works include the replacement of a number of insulated glass units due to interstitial condensation or glass cracking. The works also include the replacement of the steel framed single glazing units around the main entrance.

It is recommended that an allowance of **£7,500** is included for these works.

4.6 Corrosion

An allowance of **£5,000** should be made to replace the severely corroded louvres and clean and repair any other instances of corrosion to prevent further loss of integrity.

4.7 Other items

These works include general maintenance, cleaning and repair of items not covered by the above. An allowance of **£1,000** should be made for these works.

4.8 Building Fabric Summary Cost Breakdown

The following summarises the required cost allowances:

Item	Urgency	Cost
Concrete repair	Within next 6 months	£75,000
Internal decoration	Damp to store off learner pool to be investigated, remediated and redecorated within next 3 years – remainder of redecoration within next 5-10 years.	£7,500
External works	Within 5-10 years	£5,000
Internal finishes	Works to store off learner pool within next 3 years, remainder of works within 5-10 years.	£45,000
Glazing	Failed glass units within next 3 years.	£7,500
Steel corrosion protection	Within next 3 years	£5,000
Other items	Within 10 years	£1,000
	TOTAL	**£146,000**

Table 5 – Building Fabric main items cost summary

4.9 Building Services Summary Cost Breakdown

This covers the main items of building Services that require replacement

4.10 Electrical Installation

Services and switchgear have exceeded their economical life cycle and should be considered for refurbishment.

4.11 Heating pant

The main boilers appear to have had a new burner fitted to one of the modules in recent times with some modifications to one of the control panels controlling the pumps. This appears to have been completed in order to keep the assets running. They have well exceeded their economic life and should be considered for replacement to provide options for increased energy savings.

Item	Urgency	Cost
Heating & Hot Water System complete incl controls	Within 5-10 years	£133,900
Removal of Old Pool Plant Pipework Tanks	Within 5-10 years	£17,000
Electrical Installation Upgrade/Refurbishment	Within 5-10 years	£140,803
Upgrade Internal Lighting	Within 5-10 years	£12,355
Upgrade External Lighting	Within 5-10 years	£3,600
Upgrade Emergency Lighting	Within 5-10 years	£4,780
Ventilation Systems	Within 5-10 years	£36,300
Fan Convectors & Heat Emitters	Within 5-10 years	£35,740
Water Treatment Systems	Within 5-10 years	£17,000
Others (See breakdown of assets sheet in spreadsheet report)		£61,271
	TOTAL	**£462,749**

Table 3 – Building Services main items cost summary

4.12 Summary of Costs

4.12.1 10-Year Financial Summary of Anticipated Costs by Element Type

Element group	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
1. Substructure	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00
2. Superstructure	£80,000.00	£ 0.00	£75,000.00	£ 0.00	£5,000.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00
3. Internal Finishes	£52,500.00	£ 0.00	£ 0.00	£ 0.00	£52,500.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00
4. Fittings, Furnishings and Equipment	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00
5. Services	£462,749.23	£32,110.00	£ 300.00	£24,980.00	£114,960.00	£30,492.23	£150,942.00	£8,755.00	£100,210.00	£ 0.00	£ 0.00
6. Prefabricated Building and Building Units	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00
7. Work to Existing Buildings	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00
8. External Works	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00
Totals:	**£595,249.23**	**£32,110.00**	**£75,300.00**	**£24,980.00**	**£172,460.00**	**£30,492.23**	**£150,942.00**	**£8,755.00**	**£100,210.00**	**£ 0.00**	**£ 0.00**

Table 7 – 10-year financial summary

4.12.2 10 Year Financial Summary of Anticipated Costs Split by Building Fabric/Mechanical & Electrical Elements

Element group	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Building Fabric	£132,500.00	£ 0.00	£75,000.00	£ 0.00	£57,500.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00	£ 0.00
Mechanical & Electrical	£462,749.23	£32,110.00	£ 300.00	£24,980.00	£114,960.00	£30,492.23	£150,942.00	£8,755.00	£100,210.00	£ 0.00	£ 0.00
Totals:	**£595,249.23**	**£32,110.00**	**£75,300.00**	**£24,980.00**	**£172,460.00**	**£30,492.23**	**£150,942.00**	**£8,755.00**	**£100,210.00**	**£ 0.00**	**£ 0.00**

Table 8 – 10-year summary by building fabric/mechanical & electrical elements

4.12.3 10 Year Anticipated Costs Plan

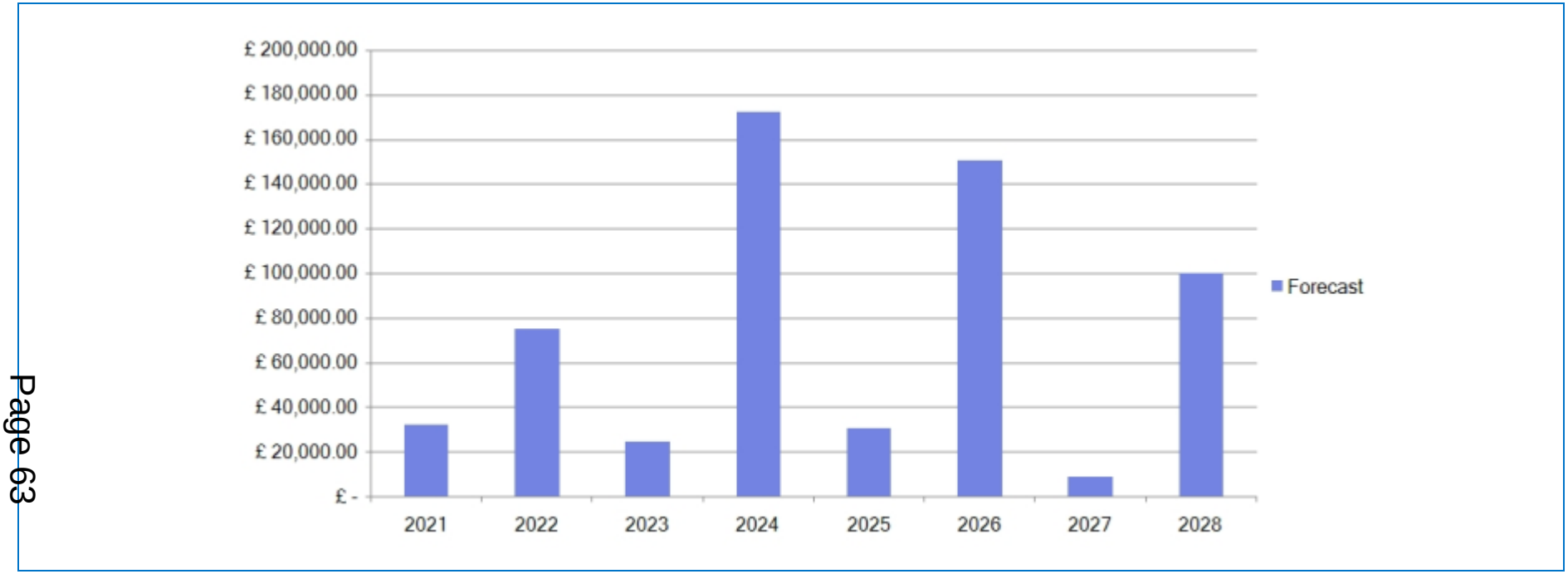


Table 4 – 10-year anticipated costs per annum

5 Survey findings – Items to be actioned within next 10 years

5.1 Building Fabric Findings

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
PS.01.	Basement | Plant Room	 	Reinforcement exposed to columns. Acro props been installed adjacent to worst affected columns. Concern over current capacity of props considering section loss of column.	Steel to be cleaned, painted and concrete repaired. Review prop requirement in interim.	D	1	July 2021

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
		 					
PS.02.	Staircase to basement		Concrete spalling and exposed reinforcement to soffit	Steel to be cleaned, painted and concrete repaired.	D	1	July 2021
PS.03.	Basement | Plant Room	 	Concrete spalling and exposed reinforcement to soffit	Steel to be cleaned, painted and concrete repaired.	C	1	July 2021

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
		 					
PS.04.	Basement | Plant Room	 	Damage to concrete (pool) walls, spalled concrete and some exposed reinforcement	loose concrete removed, reinforcement to be cleaned, painted and concrete repaired	C	2	April 2024

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
							
PS.05.	Basement | Plant Room	 	Steel louvres severely corroded.	To be cleaned and repainted or replaced	C	2	April 2024
PS.06.	Ground Floor | Main Pool		One Cracked pane. Likely thermal crack	IGU to be replaced	C	2	April 2024
PS.07.	Ground Floor | Main Pool		Couple of IGUs failed - interstitial condensation	IGU to be replaced	C	2	April 2024

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
							
PS.08.	Ground Floor | Store off Learner Pool	 	Serious damp and flaking paint.	Damp to be investigated and remediated. Re-decorate	C	2	April 2024
PS.09.	Ground Floor | Store off Learner Pool		Ceiling tiles in poor condition.	Replace ceiling tiles	C	2	April 2024

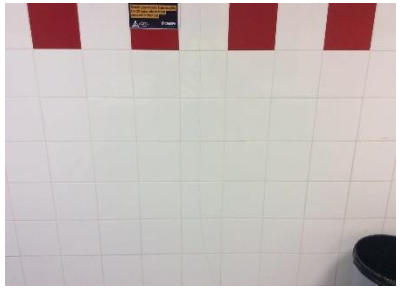
Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
							
PS.010.	Ground Floor | Store off Learner Pool		Glass units failed - interstitial condensation	IGUs to be replaced	C	2	April 2024
PS.011.	External | External Wall		Exposed reinforcement to in-situ concrete walls	Steel to be cleaned, painted and concrete repaired.	B/C	2	April 2024

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
PS.012.	External | External Area		Lots condensation to windows in reception. Difficult to see if only surface or some interstitial	Review ventilation - check for interstitial condensation	B/C	3	End 2028
PS.013.	Ground Floor | Main Pool		Paint above windows bubbling and stained	redecoration required	B/C	3	End 2028
PS.014.	Basement | Plant Room	 	Pooling water, rutted floor, dirty.	Floor to be cleaned, drained and repaired	B/C	3	End 2028

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
							
PS.015.	Ground Floor | Main Reception		Generally ok. Small number of stained tiles	Ceiling tiles to be replaced	B/C	3	End 2028
PS.016.	External | External Area	 	Painted steel single glazed units near main entrance in poor condition	Glass and frames to be replaced	B/C	3	End 2028

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
PS.017.	Ground Floor | Learner Pool		Paintwork blistering and flaking due to damp	Damp to be investigated and remediated. Re-decorate	B/C	3	End 2028
PS.018.	External | External Area	 	Concrete posts and planks car park boundary. Some spalling, some cracking, some missing, some poor alignment. Overgrown	Concrete planks to be replaced and concrete posts repaired. Vegetation to be cut back	B/C	3	End 2028
PS.019.	Ground Floor | Main Pool		Cracked tiles below windows	Tiles to be replaced	B/C	3	End 2028

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
							
PS.020.	Ground Floor | Main Pool	 	Multiple cracked tiles to floor	Tiles to be replaced	B/C	3	End 2028
PS.021.	Ground Floor | Main Pool	 	Ceiling to pool store and pool hall - tiles damaged, missing or stained	Ceiling tiles to be replaced	B/C	3	End 2028

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
							
PS.022.	Ground Floor | Learner Pool		Ceiling tiles - Some uneven, some stained	Ceiling tiles to be replaced	B/C	3	End 2028
PS.023.	Ground Floor |Changing Room (Female)		1 vertical crack apparent through wall tiles	Replace wall tiles	B/C	3	End 2028

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
PS.024.	Ground Floor |Changing Room (Female)	  	Ceiling tiles not matching and in various states of repair. Floor and walls typically OK	Ceiling tiles to be replaced	B/C	3	End 2028
PS.025.	Staircase to basement		Paintwork scuffed and flaking in places	Walls to be redecorated	B/C	3	End 2028

Item Ref	Survey location	Photo	Comments	Remediation required	Grade	Priority	To be actioned by:
PS.026.	Staircase to basement	 	Ceiling tiles missing	Ceiling tiles to be replaced	B/C	3	End 2028

5.2 Building Services Findings

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.1. Specialist Piped Supply Installations / 5.13.1.3. Water Treatment Condition Grade: C Quantity/Unit: 1.00 Cost: £2,000.00 Comments: Possibly updated as part of new water treatment systems Defects: Fair Condition. Action: Maintain	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.1.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.1. Specialist Piped Supply Installations / 5.13.1.3. Water Treatment Condition Grade: C Quantity/Unit: 1.00 Cost: £10,000.00 Comments: Poor condition Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.1.3. / 1 .
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.1. Specialist Piped Supply Installations / 5.13.1.3. Water Treatment Condition Grade: C Quantity/Unit: 1.00 Cost: £3,300.00 Comments: Poor condition Defects: End of Serviceable Life. Action: Replace	 .

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.1. Specialist Piped Supply Installations / 5.13.1.4. Swimming Pool Treatment & Filtration Condition Grade: C Quantity/Unit: 2.00 Cost: £8,500.00 Comments: Units are redundant and have been replaced however units should be arranged to be removed Defects: Obsolete. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.1.4. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.1. Specialist Piped Supply Installations / 5.13.1.4. Swimming Pool Treatment & Filtration Condition Grade: C Quantity/Unit: 1.00 Cost: £4,500.00 Comments: New membrane water treatment system for main pool Defects: No Defect. Action: Maintain	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.1.4. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.1. Specialist Piped Supply Installations / 5.13.1.4. Swimming Pool Treatment & Filtration Condition Grade: B Quantity/Unit: 1.00 Cost: £ 600.00 Comments: New membrane water treatment system for main pool Defects: No Defect. Action: Maintain	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.1.4. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.1. Specialist Piped Supply Installations / 5.13.1.4. Swimming Pool Treatment & Filtration Condition Grade: C Quantity/Unit: 1.00 Cost: £ 890.00 Comments: New control panel for water treatment system installed approx 5 years ago Defects: No Defect. Action: Maintain	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.1.4. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.5. Water Features / 5.13.5.2. Pumps, Filtration Equipment Etc. Condition Grade: C Quantity/Unit: 1.00 Cost: £2,450.00 Comments: Maintain Defects: Fair Condition. Action: Maintain	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.5.2. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.5. Water Features / 5.13.5.2. Pumps, Filtration Equipment Etc. Condition Grade: A Quantity/Unit: 0.00 Cost: £1,850.00 Comments: Newly installed Defects: No Defect. Action: Maintain	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.5.2. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.1. Specialist Piped Supply Installations / 5.13.1.4. Swimming Pool Treatment & Filtration Condition Grade: C Quantity/Unit: 2.00 Cost: £3,000.00 Comments: Poor condition due to chemical spillage still have olde reduced at units in place area requires a good clean up Defects: Poor Condition. Action: Further Investigation	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.1.4. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.5. Water Features / 5.13.5.2. Pumps, Filtration Equipment Etc. Condition Grade: C Quantity/Unit: 0.00 Cost: £1,930.00 Comments: Poor condition Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.5.2. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.2. Distribution Boards Condition Grade: C Quantity/Unit: 1.00 Cost: £ 890.00 Comments: No longer able to source MCB's Defects: Obsolete. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.2. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.5. Heat Source / 5.5.1. Heat Source / 5.5.1.10. Flues – Common Condition Grade: C Quantity/Unit: 2.00 Cost: £3,500.00 Comments: Part of original,installation Defects: . Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.5.1.10. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.2. Distribution Boards Condition Grade: C Quantity/Unit: 1.00 Cost: £ 750.00 Comments: No longer able to source MCB's Defects: Obsolete. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.2. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.6. Space Heating & Air Conditioning / 5.6.1. Central Heating / 5.6.1.1. Pressurisation Unit Condition Grade: C Quantity/Unit: 1.00 Cost: £3,000.00 Comments: Recently install Defects: No Defect. Action: Maintain	 Pontardawe Swimming Pool / Basement | Plant Room / 5.6.1.1. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.6. Space Heating & Air Conditioning / 5.6.1. Central Heating / 5.6.1.2. Pressurisation - Expansion Vessel Condition Grade: C Quantity/Unit: 2.00 Cost: £ 700.00 Comments: Newly installed Defects: Fair Condition. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.6.1.2. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.5. Water Features / 5.13.5.2. Pumps, Filtration Equipment Etc. Condition Grade: C Quantity/Unit: 1.00 Cost: £1,850.00 Comments: Replace Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.5.2. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.13. Specialist Installations / 5.13.5. Water Features / 5.13.5.3. Other Condition Grade: C Quantity/Unit: 1.00 Cost: £6,300.00 Comments: Air Compressors Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.13.5.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 996.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 996.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 996.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 996.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.1. Electric Mains & Sub-Mains Distribution / 5.8.1.10. Main Switchboard Condition Grade: C Quantity/Unit: 0.00 Cost: £8,540.00 Comments: Bus bar s replace with new McCB switch panel Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.1.10. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.1. Electric Mains & Sub-Mains Distribution / 5.8.1.1. Incoming Electrical Supply Condition Grade: C Quantity/Unit: 1.00 Cost: £ 300.00 Comments: Undertake regular inspections Defects: Fair Condition. Action: Maintain	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.1.1. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.1. Electric Mains & Sub-Mains Distribution / 5.8.1.9. Power Factor Correction Condition Grade: C Quantity/Unit: 1.00 Cost: £2,500.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.1.9. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.3. Lighting Installations / 5.8.3.4. Single Fitting Condition Grade: C Quantity/Unit: 22.00 Cost: £3,870.00 Comments: Replace with more energy efficient LED type fittings Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.3.4. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 996.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.7. General Wiring Systems Condition Grade: C Quantity/Unit: 1.00 Cost: £ 300.00 Comments: Leaks above are a concern causing corrosion investigate and rectify Defects: Major Fault or Defect. Action: Service	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.7. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 996.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	.
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 2.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1 .

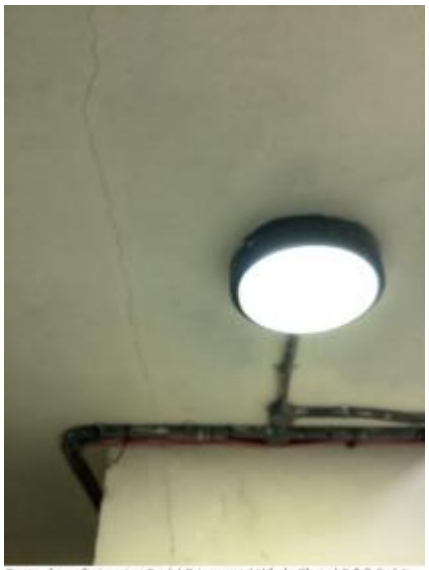
Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 0.00 Cost: £1,285.00 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 597.93 Comments: Refurbish Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 597.93 Comments: Refurbishment electrical installation Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

Details	Photo
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 8.00 Cost: £ 597.93 Comments: Refurbish electrical switchgear Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1
Location: Basement | Plant Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.3. Sub-Switchboard Condition Grade: C Quantity/Unit: 1.00 Cost: £ 597.93 Comments: Poor condition Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Plant Room / 5.8.2.3. / 1

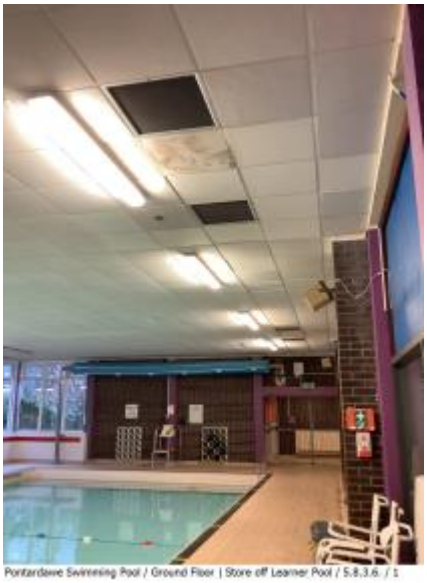
Details	Photo
Location: Basement | Whole Floor Element Group/Code/Description: 5. Services / 5.5. Heat Source / 5.5.1. Heat Source / 5.5.1.6. Boiler Plant - Gas Forced Draught Burner Condition Grade: C Quantity/Unit: 2.00 Cost: £21,150.00 Comments: Installed in 2010 Defects: End of Serviceable Life. Action: Service	 Pontardawe Swimming Pool / Basement | Whole Floor / 5.5.1.6. / 1
Location: Basement | Whole Floor Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.3. Lighting Installations / 5.8.3.6. Luminaires Condition Grade: C Quantity/Unit: 4.00 Cost: £ 290.00 Comments: Replace with LED Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Basement | Whole Floor / 5.8.3.6. / 1

Details	Photo
Location: External | External Area Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.3. Lighting Installations / 5.8.3.2. External Luminaires Condition Grade: C Quantity/Unit: 4.00 Cost: £ 450.00 Comments: Replace with LED Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / External | External Area / 5.8.3.2. / 1
Location: External | External Area Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.3. Lighting Installations / 5.8.3.2. External Luminaires Condition Grade: C Quantity/Unit: 4.00 Cost: £ 450.00 Comments: Replace with LED lighting Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / External | External Area / 5.8.3.2. / 1

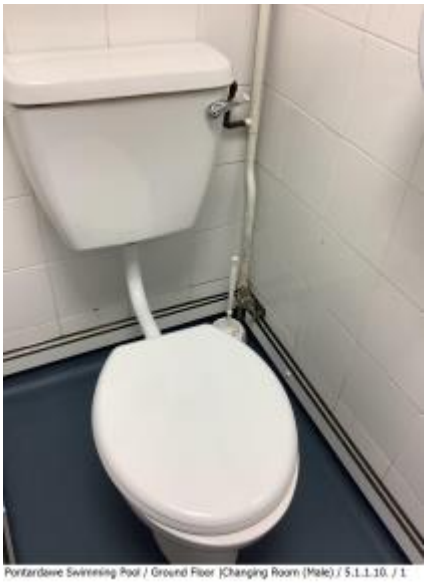
Details	Photo
Location: Ground Floor | Main Pool Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.2. Distribution Boards Condition Grade: C Quantity/Unit: 1.00 Cost: £ 950.00 Comments: Upgrade Defects: Fair Condition. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Main Pool / 5.8.2.2. / 1
Location: Ground Floor | Main Pool Element Group/Code/Description: 5. Services / 5.7. Ventilation Systems / 5.7.2. Local & Special Ventilation / 5.7.2.4. Fan - Single Condition Grade: C Quantity/Unit: 1.00 Cost: £ 462.00 Comments: Run to failure Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Main Pool / 5.7.2.4. / 1

Details	Photo
Location: Ground Floor | Main Pool Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.3. Lighting Installations / 5.8.3.6. Luminaires Condition Grade: C Quantity/Unit: 31.00 Cost: £ 245.00 Comments: Replace with LED Defects: Fair Condition. Action: Maintain	
Location: Ground Floor | Main Pool Element Group/Code/Description: 5. Services / 5.6. Space Heating & Air Conditioning / 5.6.1. Central Heating / 5.6.1.16. Fan Convectors Condition Grade: C Quantity/Unit: 13.00 Cost: £2,470.00 Comments: Replace or Refurbish Defects: End of Serviceable Life. Action: Replace	

Details	Photo
Location: Ground Floor | First Aid Room Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.9. Wash Hand Basin and Taps Condition Grade: C Quantity/Unit: 1.00 Cost: £ 350.00 Comments: Maintain in line with HS requirements and repair as required Defects: Fair Condition. Action: Maintain	 Pontardawe Swimming Pool / Ground Floor | First Aid Room / 5.1.1.9. / 1
Location: Ground Floor | Creche Element Group/Code/Description: 5. Services / 5.7. Ventilation Systems / 5.7.2. Local & Special Ventilation / 5.7.2.4. Fan - Single Condition Grade: C Quantity/Unit: 2.00 Cost: £ 240.00 Comments: Appears redundant remove and make good Defects: Obsolete. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Creche / 5.7.2.4. / 1

Details	Photo
Location: Ground Floor | Store off Learner Pool Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.3. Lighting Installations / 5.8.3.6. Luminaires Condition Grade: C Quantity/Unit: 8.00 Cost: £ 180.00 Comments: Replace with LED more energy efficient Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Store off Learner Pool / 5.8.3.6. / 1
Location: Ground Floor | Store off Main Pool Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.2. Distribution Boards Condition Grade: C Quantity/Unit: 1.00 Cost: £1,350.00 Comments: Maintain upgrading in line with recommendations from inspections reports Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Store off Main Pool / 5.8.2.2. / 1

Details	Photo
Location: Ground Floor | Store off Main Pool Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.2. Power Installations / 5.8.2.8. Surface Mounted Accessories & Outlets Condition Grade: C Quantity/Unit: 6.00 Cost: £18,110.00 Comments: Poor condition Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Store off Main Pool / 5.8.2.8. / 1
Location: Ground Floor |Changing Room (Male) Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.6. Shower Tray Condition Grade: C Quantity/Unit: 1.00 Cost: £ 350.00 Comments: Service and replace units as they fail Defects: Fair Condition. Action: Replace	 Pontardawe Swimming Pool / Ground Floor |Changing Room (Male) / 5.1.1.6. / 1

Details	Photo
Location: Ground Floor |Changing Room (Male) Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.10. WC Suite Condition Grade: C Quantity/Unit: 2.00 Cost: £ 350.00 Comments: Maintain and repair as and when reuired Defects: Fair Condition. Action: Maintain	 Pontardawe Swimming Pool / Ground Floor |Changing Room (Male) / 5.1.1.10. / 1
Location: Ground Floor |Changing Room (Male) Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.9. Wash Hand Basin and Taps Condition Grade: C Quantity/Unit: 2.00 Cost: £ 350.00 Comments: Maintain and repair as and when required Defects: Fair Condition. Action: Maintain	 Pontardawe Swimming Pool / Ground Floor |Changing Room (Male) / 5.1.1.9. / 1

Details	Photo
Location: Ground Floor |Changing Room (Male) Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.8. Urinals (Bowl) Condition Grade: C Quantity/Unit: 2.00 Cost: £ 450.00 Comments: Maintain answer service Defects: Fair Condition. Action: Maintain	 Pontardawe Swimming Pool / Ground Floor |Changing Room (Male) / 5.1.1.8. / 1
Location: Ground Floor |Changing Room (Male) Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.4. Cistermiser and Water Saver Condition Grade: C Quantity/Unit: 1.00 Cost: £ 369.00 Comments: Run to failure Defects: Fair Condition. Action: Replace	 Pontardawe Swimming Pool / Ground Floor |Changing Room (Male) / 5.1.1.4. / 1

Details	Photo
Location: Ground Floor |Family Changing Room Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.2. Sanitary Ancillaries / 5.1.2.1. Toilet Cubicles Condition Grade: C Quantity/Unit: 1.00 Cost: £2,780.00 Comments: Maintain Defects: Fair Condition. Action: Service	 Pontardawe Swimming Pool / Ground Floor |Family Changing Room / 5.1.2.1. / 1
Location: Ground Floor |Family Changing Room Element Group/Code/Description: 5. Services / 5.8 . Electrical Installations / 5.8.3. Lighting Installations / 5.8.3.6. Luminaires Condition Grade: C Quantity/Unit: 9.00 Cost: £ 240.00 Comments: Consider replacing LED Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Ground Floor |Family Changing Room / 5.8.3.6. / 1

Details	Photo
Location: Ground Floor | Toilets Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.10. WC Suite Condition Grade: C Quantity/Unit: 1.00 Cost: £ 350.00 Comments: Maintain Defects: Fair Condition. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Toilets / 5.1.1.10. / 1
Location: Ground Floor | Toilets Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.9. Wash Hand Basin and Taps Condition Grade: C Quantity/Unit: 2.00 Cost: £ 380.00 Comments: Maintain and repair as required Defects: Fair Condition. Action: Maintain	 Pontardawe Swimming Pool / Ground Floor | Toilets / 5.1.1.9. / 1

Details	Photo
Location: Ground Floor | Toilets Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.1. Sanitary Appliances / 5.1.1.8. Urinals (Bowl) Condition Grade: C Quantity/Unit: 2.00 Cost: £ 400.00 Comments: Service and repair as required Defects: Fair Condition. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Toilets / 5.1.1.8. / 1
Location: Ground Floor | Toilets Element Group/Code/Description: 5. Services / 5.1. Sanitary Installations / 5.1.2. Sanitary Ancillaries / 5.1.2.4. Hand Dryers Condition Grade: C Quantity/Unit: 2.00 Cost: £ 490.00 Comments: Run to failure Defects: Fair Condition. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Toilets / 5.1.2.4. / 1

Details	Photo
Location: Ground Floor | Whole Floor Element Group/Code/Description: 5. Services / 5.6. Space Heating & Air Conditioning / 5.6.1. Central Heating / 5.6.1.15. Radiators Condition Grade: C Quantity/Unit: 1.00 Cost: £ 330.00 Comments: Poor condition signs of corrosion Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Whole Floor / 5.6.1.15. / 1
Location: Ground Floor | Whole Floor Element Group/Code/Description: 5. Services / 5.6. Space Heating & Air Conditioning / 5.6.1. Central Heating / 5.6.1.15. Radiators Condition Grade: C Quantity/Unit: 10.00 Cost: £ 330.00 Comments: Poor condition signs of corrosion Defects: End of Serviceable Life. Action: Replace	 Pontardawe Swimming Pool / Ground Floor | Whole Floor / 5.6.1.15. / 1

This page is intentionally left blank

Appendix 1
Impact Assessment - First Stage

1. Details of the initiative

Initiative description and summary: Pontardawe Swimming pool emergency works funding.
Service Area: Support Services and Transformation.
Directorate: Education, Leisure and Lifelong Learning.

2. Does the initiative affect:

	Yes	No
Service users	✓	
Staff	√	
Wider community	✓	
Internal administrative process only		✓

3. Does the initiative impact on people because of their:

	Yes	No	None/ Negligible	Don't Know	Impact H/M/L	Reasons for your decision (including evidence)/How might it impact?
Age		✓				All users of the swimming pool will be affected by the temporary closure of the pool. Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.
Disability		✓				

Gender Reassignment		✓				All users of the swimming pool will be affected by the temporary closure of the pool. Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.
Marriage/Civil Partnership		✓				All users of the swimming pool will be affected by the temporary closure of the pool. Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.
Pregnancy/Maternity		✓				All users of the swimming pool will be affected by the temporary closure of the pool. Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.
Race		✓				All users of the swimming pool will be affected by the temporary closure of the pool. Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.
Religion/Belief		✓				All users of the swimming pool will be affected by the temporary closure of the pool. Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.
Sex		✓				All users of the swimming pool will be affected by the temporary closure of the pool. Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.
Sexual orientation		✓				All users of the swimming pool will be affected by the temporary closure of the pool. Without the works being carried out, Pontardawe Swimming Pool will be permanently closed.

4. Does the initiative impact on:

	Yes	No	None/ Negligible	Don't know	Impact H/M/L	Reasons for your decision (including evidence used) / How might it impact?
People's opportunities to use the Welsh language		✓				The proposal has no impact on the ability to restrict people's opportunities to use the Welsh language.
Treating the Welsh language no less favourably than English		✓				At no time will the Council or Celtic Leisure be treating the Welsh language no less favourable than English.

5. Does the initiative impact on biodiversity:

	Yes	No	None/ Negligible	Don't know	Impact H/M/L	Reasons for your decision (including evidence) / How might it impact?
To maintain and enhance biodiversity		✓				There will no impact on the ability to maintain and enhance biodiversity.
To promote the resilience of ecosystems, i.e. supporting protection of the wider environment, such as air quality, flood alleviation, etc.		✓				There will no impact on the ability to maintain and enhance biodiversity.

6. Does the initiative embrace the sustainable development principle (5 ways of working):

	Yes	No	Details
Long term - how the initiative supports the long term well-being of people	✓		Without the works being carried out, Pontardawe Swimming Pool will be permanently closed. It is estimated by ARUP that these works will extend the life of the swimming pool by two years.
Integration - how the initiative impacts upon our wellbeing objectives	✓		Well-being Objective 1 - To improve the well-being of children and young people - . "All of our children and young people have the best start in life, so they can be the best they can be" ***This proposal will ensure residents of Neath Port Talbot continue to have the opportunity to participate in physical activity at Pontardawe Swimming Pool.*** • Well-being Objective 2 - To improve the well-being of all adults who live in the county borough - "Everyone participates fully in community life – socially and economically" ***This proposal will ensure residents of Neath Port Talbot continue to have the opportunity to participate in physical activity at Pontardawe Swimming Pool.*** • Well-being Objective Aim 3 - To develop the local economy and environment so that the well-being of people can be improved, and all communities are thriving and sustainable. ***This proposal will ensure local jobs, generating income for the local economy***. "The whole of Neath Port Talbot county borough will be a vibrant and healthy place to live, work and enjoy recreational time" ***This proposal will ensure residents of Neath Port Talbot continue to have the opportunity to participate in physical activity*** at ***Pontardawe Swimming Pool.***
Involvement - how people have been involved in developing the initiative	✓		NPT officers, Celtic Leisure CEO and ARUP

Collaboration - how we have worked with other services/organisations to find shared sustainable solutions	✓		NPT officers, Celtic Leisure CEO and ARUP
Prevention - how the initiative will prevent problems occurring or getting worse	✓		Without the works being carried out, Pontardawe Swimming Pool will be permanently closed. It is estimated by ARUP that these works will extend the life of the swimming pool by two years.

7. Declaration - based on above assessment (tick as appropriate):

A full impact assessment (second stage) **is not** required	√
Reasons for this conclusion	
The proposal is non-discriminatory as no protective characteristic will be adversely affected. The proposal has no impact on Welsh Language. The Proposal has no impact on biodiversity. The proposal is in line with the Council's obligations under the Wellbeing of Future Generations Act 2015	

A full impact assessment (second stage) **is** required	
Reasons for this conclusion	

	Name	Position	Date
Completed by	Paul Walker	Operations Coordinator	29/11/2022
Signed off by	Andrew Thomas	Director	29/11/22