

# Annex 1 - Quarry Swimming & Fitness Centre Condition

Summary of Key Issues relating to the Faithful & Gould Condition Survey Report (Updated 2022) and PSG building surveys.

Conclusion – the report concludes with the statement:

The report concludes that “*The Quarry Pools & Fitness Centre (as previously reported in 2014 & 2019) is coming to the end of its usable life*”.

Note: In 2023 all the Health and Safety Priority 1 issues from the report were addressed in the repair programme – and these are highlighted in bold and costed in excess of £400,000.

The following sections summarise the key findings and open issues with the Quarry buildings.

## Building Structure

The Quarry Swimming & Fitness Centre is constructed from a variety of construction types originating in 1864, with extensive demolition rebuilding & enlargement taking place in the 1960's, & was refurbished in the mid 1990's.

There are numerous local defects throughout the building as follows:

- Recently removed the maintenance gantry/walkways, ventilation ducting & ceiling grid above the Quarry Pool, due to extensive corrosion within the supporting steel work/steel elements. Corrosion of metallic components within the building caused by the chlorine being present in the pool water, older steel materials which aren't resistant & will be subject to ongoing maintenance costs.
- Structure engineer (Thomas Consulting) recommended further investigations to determine the extent of corrosion to the Quarry Hall roof steelwork – **now complete**.
- Part of the diving platform structure has recently been removed & encasement works carried out due to corrosion.
- Structure engineer (Thomas Consulting) have recommended to undertake a detailed investigations to determine the nature of the concrete & wood-wool slabs roof deck construction, to the lower roof sections. As movement has been detected within the insulation boards, which are deteriorating & curling up, joints in the insulation boards have opened up, with significant plant growth present, damaged to the ballast layer in numerous locations, with a limited life span of the waterproof membrane which will need replacing in the short term.
- Specialist (Faithful & Gould) recommended to undertake further investigations (opening-up) to determine the cause of the extensive cracking to the north elevation of the Quarry Pool. It is more than likely to relate to a lack of adequate expansion joints/poor detailing, to compensate for differential movement between the block cavity walls & steel supporting columns, or the horizontal cracking in the external blockwork could be a result of the corrosion of wall ties.
- Corrosion of the steel roof trusses over Claremont & Priory Pools, which requires cleaning & treatment to prevent further corrosion.

- Corrosion of the concrete slab soffits in the Plant Room, due to the steel reinforcement being exposed to chlorides, caused the concrete to spall. Detailed investigation is required to establish the extent of the corrosion.
- Further investigations recommended to the boxed steelwork beams in the Plant Room, to determine the extent of corrosion & necessary treatment.
- The building envelope is poor in terms of thermal efficiency compared to modern standards, therefore not very energy efficient.
- Leak noted to Claremont Pool seeping into undercoft.

### Building Envelope

Damaged to fibre cement fascia panels (may contain asbestos) & one section is missing.

The render finishes are in a poor state of condition, being blown (debonded from the substrate) & cracked, throughout the building & needs to be replaced. Water is penetrating the render & is impacting upon internal finishes, causing plaster to debond.

Further investigation is required to the render which has failed over the concrete framing members, as cracking may permeate through the structural frame. Localised concrete spalling is present, which suggests corrosion of the steel reinforcement, this is normally due to a lack of adequate concrete cover to the reinforcement. Further investigations are required to establish the cause of the concrete spalling.

Localised stepped over vertical cracking in the brickwork throughout the building, which most likely relates to the lack of expansion joints or possible corrosion of wall ties, or lack of. This clearly illustrates movement within the superstructure. Recommend further opening to establish the condition of existing wall ties & monitor the cracks for potential progress movement, if appropriate structural repairs using stitch tie repairs will be required.

The brickwork generally is deteriorating at ground level is considered in a poor state of condition. The mortar joints have weathered & requires repointing.

Incidents of the phenolic resin cladding panel soffits falling off from high level, due to the corrosion of mild steel screw fixings, which have previously been replaced with stainless steel screws. This was caused by the presence of chlorine in the Quarry Pool.

Timber louvres are in poor condition with low level framing members suffering from timber decay, with localised missing or decayed slats & the finish to protect the timber has failed. Timber doors are in a poor condition, suffering from decay or damage, H&S issues with the glazing, see section below.

### Glazing

Cladtech Associates Limited (independent specialist) have carried out a report on the condition of the existing glass & glazing. Their findings are summarised below.

The existing curtain walling system dates to the early 1960s & doesn't include drainage facilities within the system. They rely on glazing compounds to seal the double-glazed units & prevent water ingress. The lack of drained & ventilated curtain/window system greatly reduces the life expectancy of the double-glazed units (e.g., will only last less than 5 years) & will accelerate failure rate of replacement units. The existing system is not fit for purpose.

The double-glazed units incorporate 12-16mm wide cavity spacers, combined with solid framing system are considered poor in terms of thermally efficiency, when compared to modern standards.

Total of 9 double glazed units are fractured with cracks either in the outer or inner panes. – ***The units on the southern elevation have now been replaced.***

Total of 23 double glazed units have failed, (no longer hermetically sealed [i.e., they have misted up internally due to the formation of initial condensation]), some are replacement units.

Localised failure of the external glazing beads, due to detachment of the clips that hold them in place. Sealant has been applied locally to prevent by the application of sealant (considered a temporary repair temporary repair). These beads are considered dangerous when they become loose when located above pedestrian areas.

Monthly precautionary inspections on H&S grounds, are taking place of the fenestrations, to monitor the potential for further detachment of the glazing beads. Ongoing cost to resecure the beads.

The internal & external glazing compounds are considered in a poor condition, they've hardened & become friable in numerous locations. This will allow water ingress from rain & condensation, due to a lack of drainage, the standing water will reduce the life expectancy & increase failure in the units.

The glazed facades to the Quarry Pool & associated areas have reached the end of their service life & require complete replacement, with a modern thermally broken, drained & ventilated curtain walling system. It would cost £276,000.00 to replace the glazing to the Quarry Pool alone.

### Internal

Finishes are generally in a poor condition, subject to general wear and tear, and water damage / deterioration.

The high chlorinated & humid swimming pool atmosphere has deteriorated the internal finishes, as well as metallic elements, which are suffering from heavy corrosion. The tiled floor covering area in a poor condition & need replacing. See H&S comments below.

Wall finishes are suffering from water damage below the high-level windows causing the plaster finishes to deboned & fail. Wall tile finishes have also deboned & cracked with corrosion forming around edge beads & the like.

The medical room, staff changing areas & upper staff offices are in a poor state of condition, suffering from a severe deterioration of finishers, fixtures & fittings. These areas need extensive work & investment to upgrade to modern acceptable facilities. Other staff accommodation areas to the upper ground floor, have degraded due to the highly chlorinated & humid atmosphere, which lead to severe damage to plaster and decorative reveals.

Internal finishes to various circulation spaces & spectator seating are tired & suffering from general wear & tear, with isolated damage.

The floor & wall covering in the main reception area are in a poor state of condition, with low level water damage to plastered finishes. The reception counter does not meet current Building Regulations standards or Equality Act 2010, as it does not provide facilities for wheelchair or ambulant disabled users.

The catering kitchen & café are in need a full refurbishment.

The spa facilities are in a poor condition, with wall/floor tiles having numerous ill matching replacement and grouting has failed and cracked, these need to be replaced throughout. The timber cladding panels within the Sauna area are damaged & suffering from decay. Also, the steam room is also damaged in part & needs refurbishing. The textured ceiling in these areas need to be replaced due to corrosion & salt staining, as a consequence of chlorinated water purging through the deck from above.

Poor falls in the floor finishes in the changing areas, leading to standing water, which has caused decay or corrosion of low-level fixings. Finishes throughout the changing room areas are suffering from general wear & tear with isolated damage, such as cracked tiles etc..

Plant room areas in a poor condition, with severely degraded finishes and suffering from general damage & spalling, numerous repairs are required.

Door sets throughout the centre are in a poor condition, suffering from mechanical damage & timber decay, & need replacing throughout.

### Fire Safety

Wet rot & decay to fire doors located in wet areas, (e.g., changing rooms, pool areas etc.), which has compromised smoke/intumescent seals & the fire performance of the door sets. Generally, the doors to the centre are generally worn & ill fitted & comprise the building compartmentation strategy.

Lack of compartmentation between the basement & ground floor, which is effectively one zone. High risk of combustion associated with the plant room.

The current design for the escape routes is inadequate (e.g., lacks refuge points).

There were no automated fire rated shutter (linked to the fire alarm system) between the kitchen facilities & the café servery area. – **Fire rated shuttering has now been installed** .

Noncompliant fire door fitted to the plant room.

Distribution board in the Kitchen is non-IP rated & needs to be replaced.

### Health & Safety

The glazing to the spectator areas was considered 'at risk' under Regulation 14 of the Workplace (Health, Safety & Welfare) Regulations 1992. As the glazing is not toughened or laminated & should be replaced. **All spectator glazing has now been retrospectively laminated and fixings repaired.** There is cracked or damaged glazing (e.g., door, screens etc.) throughout the property, which should be replaced.

Asbestos containing materials are present within the 1960's elements of the building. There is an ongoing risk of managing potential damage and contamination from future maintenance or refurbishment works.

Health risks and risks of slips & falls due to the severely worn floor finishes to swimming pool areas, with enamel surfaces being significantly eroded, which allows algae to form. There are also damaged & cracked floor surfaces which may cause injury to bare feet.

Health risks associated with the poor condition of the wall coverings, with blown & corroded finishes to most locations, increasing mould growth within crevices to textured coatings.

Risk of sudden failure of the barriers/guarding around pool areas due to severe corrosion.

There are areas of raised & uneven paving to pedestrian areas, which cause a potential trip hazard.

Lack of adequate changing facilities for disabled users, existing facilities are considered inadequate compared to modern standards.

#### Mechanical and Electrical systems and plant:

All major items and M&E plant have reached the end of their economic and recommended lifespans. Replacing these systems whilst keeping the centre operational will add to the complexity and costs.

The installed boilers are now 31 years old and now considered life expired, along with associated pumps and controls. The free standing flue stack is noted as suffering from corrosion at its base.

The low temperature hot water heating system throughout the building which used to serve radiators is no longer functional owing to large sections of pipework and emitters being removed due to corrosion and leaks. The building space heating is now only served from tempered air delivered by the building air handling units. This is noted as causing issues with damp in certain areas of building.

All ventilation plant is noted as being life expired and in poor condition. Whilst recent works have addressed the extensively corroded ductwork to the main Quarry Pool, the actual air handling units themselves along with their associated inverter drives, and controls remain in poor condition. There is a noted system design issue with the ventilation to the Priory, Claremont and Learner Pools, with poor air flow causing air quality issues. The air handling units serving these areas in particular are noted as having corroded and blocked heat exchangers.

Pool filtration systems are in need of overhaul, and associated plantroom wide pipework, valves and controls in need of replacement. Chlorine chemical dosing systems are noted as in poor condition and in need of replacement.

Comfort cooling plant in certain areas is noted as running on R22 refrigerant and will require replacement once any refrigerant leaks.

The main electrical switchgear original and considered life expired. General LV wiring and distribution, whilst currently serviceable is life expired and at risk of failure.

The lift plant is noted as in need of major refurbishment / replacement.