



PROJECT CASE STUDY - CHASE FARM NHS HOSPITAL

Project Cost: £2,100,000.00

Project Client: Royal Free London NHS Foundation Trust

Specified Products:

Deck Coatings: DeckProtect+ Systems

Roof Coatings: Tremco AlphaGuard Repoma

Planter Waterproofing & Drainage: PMB Blueshield & ABG Deck drain

Anti-Carbonation Paint: Nufins Covercrete

Movement Joints: Transflex

Concrete Repairs: Nufins Specialist Repair Mortars

Lighting: GTB46/W3/4K & GTB46/4K Luminaires with Integrated Eye-Wi System

Duration: 32 Weeks

Project Start: October 2019

Project Finish: July 2020

StructureCare

INTRODUCTION

StructureCare were appointed as main contractor for the refurbishment of the Chase Farm MSCP located in Enfield, North London following a competitive three phase tender process managed by WT Partnership. The existing multi-storey car park (MSCP) at Chase Farm Hospital provides approximately 520 car park spaces. It is a key component of the Trust's travel plan for the site, both facilitating ease of access for patients and visitors travelling by car and supporting recruitment and retention by enabling staff to park conveniently on-site.

The MSCP is a concrete frame structure and was built during the 1970's. No significant refurbishment has been undertaken since construction. The structure comprises seven levels of car parking in a ramped arrangement accessed from an entrance to the East Elevation. The suspended decks (Levels 3,4,5,6 and 7) comprise of a cast in-situ ribbed reinforced concrete slab spanning between cast in-situ reinforced concrete beams that are supported on in-situ reinforced concrete columns. The lower decks (Levels 1 and 2) are ground bearing reinforced concrete slabs.

The main car park structure is divided into three sections with movement joints provided along the perimeter of the structure and Levels 6 and 7 where they run in a transverse direction. These joints have not been repeated in the decks for Levels 1 through to 5, but it is apparent that a day joint was formed at these locations when the car park was constructed.

SCOPE OF WORKS & METHODOLOGY

Concrete repairs - Repairs undertaken to decks, overhead and vertical elements of the structure using high build lightweight fibre reinforced cementitious repair materials.

Sacrificial Anodes - All structural repairs had the PatchGuard sacrificial anodes installed around the perimeters to protect the steel reinforcement against future corrosion.

Deck Coatings - High quality, easy to clean and durable protective deck coatings to improve the aesthetics within the car park as well as preventing further water and salt ingress into the concrete.

DeckProtect⁺Blueshield was applied on the exposed top decks.

DeckProtect⁺Rapidflex was applied to all internal decks.

Roof Coatings – Overcoating the existing stair core roofs with a liquid system to prevent future ingress of water.

Tremco Repoma has been applied to all stair core roofs following preparation of the existing asphalt covering.

Bus Lane Alteration Works - Adapting the footway, kerb line and relevant road markings to facilitate a new bus route which was diverted as part of the Chase Farm Hospital redevelopment programme. Works were undertaken in accordance with the current Department of Transport Specification for Highways Works and included resurfacing the carriageway using pigmented tarmac.

Application of Anti-Carbonation Coatings – Painting of soffits, columns and walls with anti-carbonation coatings to improve the visual appearance and protect concrete elements from carbon dioxide ingress and carbonic acid formation.

Movement Joint Replacement - Removal of existing failed top deck expansion joints followed by the supply and installation of Transflex mechanical movement joints bolted to the structure. In addition to this, all day joints and construction joints were replaced using a polysulphide sealant.

Lighting, Fire and CCTV Upgrades – The existing M&E infrastructure was uneconomical and some containment had corroded. Historical M&E dating back to construction was removed and a new highway of containment installed in addition to a suite of CCTV cameras and a purpose built IT Hub for future monitoring and maintenance.

Signage and Stair Core Overhaul – Existing way-finding and fire safety signage was redesigned and installed to meet current regulations and modernise the facility. In addition, walls and ceilings were painted and anti-slip deck coatings applied to landings and stairs.

Cycle Facilities – A purpose-built Cycle Store was designed and built to provide secure storage for up to 20 bicycles.

CHALLENGES ENCOUNTERED

A unique challenge faced on this project saw StructureCare tasked with providing a more suitable, maintenance free solution to the outside perimeters of the MSCP. Originally, overgrown planters were deemed a maintenance headache for the Trust. In order to resolve this, StructureCare were to remove 1,200 tonnes of soil and vegetation from the 600 lm of planters wrapping the perimeter edge of levels 3,4,5,6 & 7. During these works parking and pedestrian access had to be maintained to the areas below.



Overgrown perimeter planters

In order to remove the soil safely whilst allowing free pedestrian passage, StructureCare engaged with their scaffolding sub-contractor to design a temporary edge protection system fixed externally to the structure to allow free movement whilst removing the soil from inside the parking decks. This innovative temporary edge protection system allowed the works to be undertaken safely without having to close large sections of the MSCP.

Once the edge protection system design was approved and erected, StructureCare were able to commence the removal of the soil using a series of small 1.5 tonne excavators positioned parallel to the parapet wall with an offset boom to remove the inert materials. To move the large volume of soil from the MSCP from multiple areas of the site, a series of small tippers were filled to a capacity no greater than 1 tonne in line with the structural limitations of the parking deck. All of the soil was then sent to a local recycling plant for re-use.

Once all soil and vegetation was removed, the planters were inspected for any structural defects. The planters were then cleaned, repaired and had Pitchmastic's Blueshield PMB waterproofing applied to their internal elevations protect them from future degradation.



Various stages of the planter overhaul works.

As the waterproofing system is spray applied it provided a completely homogenous seamless fully adhered barrier to contaminants. Following the application of waterproofing, a high performance geo-composite drainage system was selected and installed to the base of the planters providing a high flow drainage capacity. This system allows rainwater to safely drain away without heavy ballast/stone filtration. This allowed the planters to be filled with insulation boards secured with a small amount of ballast to provide an aesthetically pleasing, fully waterproof, maintenance free solution.

To complete the planter overhaul, StructureCare were tasked with colour matching the bricks with the state of the art hospital buildings 'brick slip' cladding located 50m away. The MSCP is now clean and striking when you enter the hospital site and gives the site an integrated homogenous feel as if the buildings were constructed at the same time.



The Chase Farm Hospital Entrance



Before and After Images of the MSCP's exterior

PROJECT PHOTOS - BEFORE



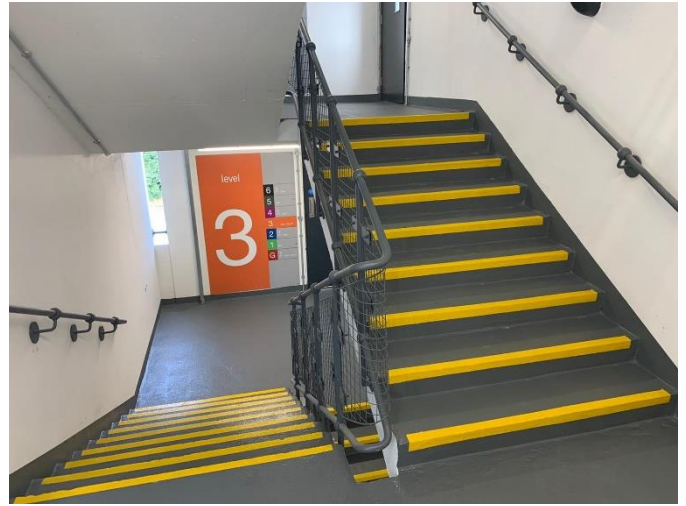
PROJECT PHOTOS - AFTER











CLIENT FEEDBACK

"The StructureCare Team are experts at transforming car park facilities. I had the pleasure of collaborating with Ross and his team at Chase Farm Hospital. Despite significant adversity during the COVID-19 pandemic, they worked diligently and maintained a high standard of delivery." Senior Project Manager for WT Partnership