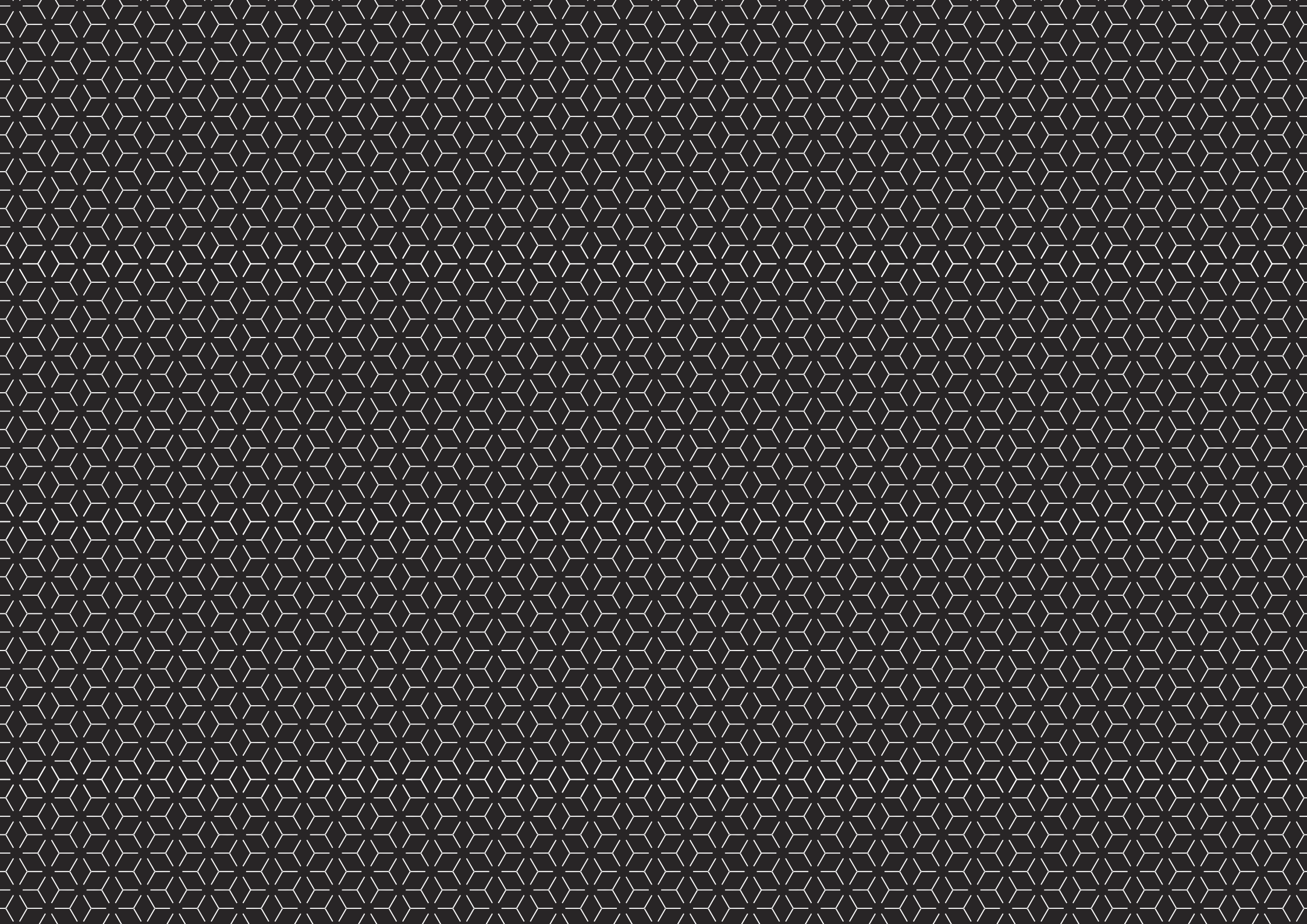
Great Central Railway Station



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GREAT CENTRAL RAILWAY
PARCELS OFFICES
24 HR

WHY

Introduction: Great Central Railway Station, Leicester

Building Transformation has been instructed by Charles Street Group to undertake the initial testing and investigations to identify the most effective and environmentally sound façade cleaning and restoration methods for the Great Central Railway Station in Leicester.

Testing was conducted in September 2017 in the North elevation of the main arrival room, which ensured that the areas test were a valid representation of the challenges seen throughout the remainder of the site.

The façade cleaning test trials and investigations were undertaken over a 2-day period and have enabled **Building Transformation** to generate an honest and transparent building cleaning and restoration proposal which identifies the variation of cleaning methods, products, dwell times, programmes, challenges and project delivery costs.

Although there are other elements of restoration that could be reviewed and covered with this project, this report focuses purely on the façade cleaning and restoration. It is also worth noting that a restoration project like this will be subject to varying degrees of risk and delivery adjustments to meet the challenges that may arise during the works.

Within this document we have provided a simple overview of the issues surrounding the project along with the potential solutions required to help not just achieve a high-quality restoration project, but also a well-managed and environmentally sound delivery.

We believe the next phase of this project is to present the findings to the business, review the demonstration videos and discuss the methods, limitations and risks along with another possible review on site.

This proposal is open to the possibility of adjustments in accordance with specific requirements or budgets, and is a solution designed to breathe new life into this majestic building once more.

At **Building Transformation**, we do things differently.
We do them right.


SERVICING
BAY
Autocolor
Paints
Used Here

WHY

Current condition

Main arrival waiting area 1910, large areas of cobbled floor, red granite kerbing

Main entrance Great Central Road 1910, red brick and terracotta façade and traditional clock tower

There were three passageways under the tracks to the platforms, and at this time only the one on the left was still in use and led to the south staircase.

WHY

Legacy

The images below show a selection of the areas that would be treated under the current restoration project. By looking to the past we are able to help restore areas of the building back close to its original glory, both in terms of its material's exposure, colour and condition.

Attention not only needs to be paid to restoring the façade, but also the surrounding materials such as the cobbles and granite kerbs. By restoring these features we have the opportunity to undertake a more holistic restoration that will bring it back closer to the original 20th century appearance.

Large ornate terracotta archway leading to the main gateway to the former

Parcels office and booking hall

2017: Today's front façade, canopies and platforms were demolished during the 1970s; the station's clocktower had previously been removed by British Rail

WHO

Our Vision

While striking modern architecture is shaping our landscape more than ever before, the world is changing around it: the demand for positive urban space has never been greater, and the need to innovate within those spaces has never been so important.

It's no longer good enough to construct buildings without a façade inspection or care plan. It's no longer good enough to keep designing and installing new structures without understanding how their performance and condition can be fully maintained and optimised for future use. It's no longer good enough to reactively treat each building with the same out-of-date and standardised solution.

That's where we come in. **Building Transformation** is on a mission to set new standards of façade care that meet the needs of the 21st-century building assets: we're bringing a completely fresh approach to help future-proof the fabric of each building. We stand for something different, refreshing and totally unique within the property market.

With our **21st Century Façades** programme, we guarantee quality and care, and the protection of Great Central Station both as an asset and as a legacy. We guarantee each building — as well as each material and elevation within the building façade — its own specific care plan. We guarantee a truly honest façade care programme that's built over time and investigation, not a predicted or generic plan. We guarantee a proactive service and a programme that's completely aligned with your needs and those of the building. We challenge the current weak and inconsistent external maintenance solutions that are poor value, ill-considered and often actively contributing to the failure and decay of a building envelope. Our façade care programmes support, re-energise, protect and maintain the property assets that we look after.

A positive built environment has a wider role to play in the positive growth and development of both commercial and community space. We want to protect the urban landscape, to help the building skin breathe and live for longer, creating buildings, places and spaces that people want to be part of, work in, interact with, succeed in, and invest in.

Building Transformation believes the building façade is the living, breathing skin of our modern landscape, a vital organ that changes and influences emotion, perception and behaviour throughout the surrounding space. We live a world where the built environment can, if we help it, positively influence our feelings, emotions and well-being — where the condition, type, design and texture of the external building fabric around us can make us feel safe, secure, valued, welcomed, considered, and even inspired.

And it's up to us to make that change.

PROTECTING URBAN SKINS

— BUILDING TRANSFORMATION —

WHO

Our Service

We bring the tools and the knowledge to create sustainable urban spaces that benefit business and community, now and in the future. Through façade consultancy, restoration projects and building skin protection work, we extend the lifespan of the built environment and produce a sense of well-being for those who live and work there.

We also provide expert, effective knowledge to deliver long-term savings and help our clients make the best financial and structural decisions for their buildings and the external building condition.

Our team

Building Transformation is a group of passionate, professional urban transformers, committed to protecting and restoring the built environment.

Our people are integral to our performance and client experience. We believe that highly valued, highly trained and well-supported staff create a higher-performing business and a positive company culture. We know this helps keep business simple and more enjoyable.

Investing in our people also helps us to create and deliver work that impacts the wider environment for the better, which in turn positively influences other people, businesses, buildings and communities.

Our internal partnership model ensures that we have an open and collaborative approach, meaning that we're all working towards the same shared vision and client objectives.

WHO

Client Testimonials

The approach and advice on setting up the works at the Wolverhampton Civic Centre were first class. ***Building Transformation****'s attention to detail was excellent and the RAMS were followed meticulously to every detail. We were delighted with the works and service, and would not hesitate to use them again, nor hesitate to recommend them to any organisation.*

Kevin Egginton,
Building Surveyor, City of Wolverhampton Council

Thanks for the great communication throughout both of the external cleaning and redecoration projects, both the hotels look amazing. It will be my pleasure to recommend ***Building Transformation*** *and I look forward to working with you next year on further projects.*

Sarah Cameron,
Operations Director, My Hotels

May & Co have worked with ***Building Transformation*** *on a number of projects which have included external building cleaning and refurbishment. They provided a great service, supported by the high level of documentation from the initial quotation to books and industry-related guidance, all relevant to our project.*

Anton Theobald
MIRPM AssocRICS, May & Co

“

Building Transformation's unquestionable honesty and enthusiasm for ensuring the client receives the correct whole-life solution (rather than a quick fix) resulted in us being able to ensure the building was not only returned to its former glory, but will stay that way for years to come.
I would recommend them to anyone.

”

Kenny Gash
Project Manager, Carillion Amey

“

The work provided by Building Transformation was excellent. Their product and building exteriors knowledge is detailed, comprehensive and practically applied to the client's needs. They offer a professional, detailed, high-quality and customer-focused service which meets the short, medium and long-term needs of the client, and provides practical, cost-realistic advice.

”

Kerry Quinn
Director of Events and Operations,
Echo Arena

“

A 200,000 sq. ft., four-storey leisure venue in the heart of Nottingham city centre surrounded by major traffic routes needed work to be done overnight to deal with the traffic issues, while the site remained open throughout. The clean was of a high standard and has made a significant different to the image of the building. A very difficult job done well.

”

Suzanne Green,
Land Securities

WHAT

Our Objective and Scope of Works

The first phase of the restoration to the Great Central Station focuses on cleaning, restoring and repairing the main Great Central Street façade along with the traditional internal arrival areas, pebbles, paving, traditional passenger walkways and storage areas.

Our initial proposal focuses on the cleaning, paint removal and restoration of the locations identified above; we have not at this stage inspected or quantified the level of repairs required. We believe this is best determined when working with the client and their requirements of finish. A more collaborative approach is likely to be required for the replacement of damaged bricks, general façade repairs and repointing, where proactive recommendation, sourcing of bricks, sampling of mortar colour and textures are required before reinstatement.

The full scope of works is currently unknown, but from the onsite testing we have compiled what we believe to be the foundations for a sensitive restoration project to the Great Central Station. Our aim is to restore the old station, using traditional conservation-based cleaning and repair methods whilst also ensuring that the methods used are effectively controlled within an environmentally sound system. At the end of the report we have provided project delivery costs based on our initial specification.

WHAT

The Great Central Station Environment and Condition

Constructed generally of a red brick and terracotta the station's façade and original masonry construction is in sound condition although in many areas covered with different layers and types of paint. It seems as though some form of acid based cleaning was undertaken some 20 to 30 years previously and this is identifiable by the façade's external condition and etching on the brick.

The brick seems on first appearance to be an engineering based product, but is in fact a softer product. Although many areas of the substrate have been sprayed, chipped and damaged, the façade seems in general sound condition with little evidence of spalling, salt leaching and sound pointing where it hasn't been disrupted by previous activity.

The external façade is generally polluted from carbon and organic matter and internal areas of the main arrival area where a glass roof limits the flow of pollution is showing higher levels of more solid carbon. Areas such as these where historical pollution prevails may remain stained to some degree once cleaned.

The environment is highly polluted by a wide range of historical engine, car and general machine oils and various paint coating systems. This is the case particularly in the main waiting area that has been more recently used as a car scrap yard, plus there is also the possibility of older train brake dust that may contain asbestos in some areas.

The condition of the main station areas varies depending on their exposure to more recent commercial activity or maintenance, as large areas have been exposed to external weathering and moisture ingress. Many areas are suffering from high organic growth and areas where paint has historically been applied are delaminated and failing. Large areas of the back-room façade have been painted with numerous coats of paint, some of which may contain lead. Further testing on this may be required to help determine the levels of any potential lead.

Not only does attention need to be paid to the external cleaning and restoration of the façade, but also to environmental and waste management to ensure that as works are progressed, pollution is also reduced and removed. Further specialist cleaning and environmental checks may be required to help support the effective removal of current and byproduct waste created from the cleaning process in certain areas.

WHAT

Listing

STATUS:

The former Great Central Railway Station is unlisted.

BUILDING CONSENT :

The cleaning or removal of paint of a listed building may be regarded as an alteration and if so will normally require Listed Building Consent to carry out. This is normally the decision of the planning department of the local authority. Structures principally of Grade II* and Grade I may further be subject to the advice and guidance in England of Historic England and of Cadw in Wales. In making decisions, the views of other officially recognised heritage bodies may also be taken into account, for example the SPAB (Society for the Protection of Ancient Buildings), the Georgian Group or local civic societies.

Listed structures may also form all or part of a Scheduled Ancient Monument. This status is granted under a separate Act of Parliament for sites of national importance. In England such monuments now fall under the direct jurisdiction of the government advisory body Historic England, from 2015 a role separated from English Heritage.

HOW

Planning, Significance and Conservation Guidance

Planning considerations (which includes that for listed buildings and structures), are currently dealt with under the National Planning Policy Framework (NPPF), introduced in 2012 and replacing Planning Policy Statements (PPSs including PPS5 - Planning for the Historic Environment) and the earlier Planning Policy Guidelines (including PPG15- Planning and the Historic Environment).

Before 2010, the activities of cleaning and paint removal were provided with specific guidance paragraphs within PPG15. Subsequently, these are dealt with under the criteria for any other type of alteration, in particular the effect of the alteration on Significance.

The PPS5 Practice Guide was superseded in 2015 by Historic Environment Good Practice in Planning in the form of Good Practice Advice Notes (currently GPA1-3) published by Historic England. Whilst the NPPF is the statutory instrument, these provide broad guidance for its implementation. Additionally there are Historic England Advice Notes that offer more specific or technical advice.
[Attrib. Listing Text for (entry 1368608), National Heritage List (NHLE). Historic England.]

Conservation Basics was published by English Heritage in 2013 as part of the Practical Building Conservation book series. It provides the most comprehensive explanation of conservation principles and practice including statutory requirements. Several volumes in the series offer pertinent cleaning and paint removal advice (Stone for example).

However, the current Good Practice Advice Notes and Historic England Advice. [Notes are free to download: https://historicengland.org.uk/advice/planning/planning-system/]

A key phrase that runs through both PPS5 and the NPPF is Significance. Part 2 of the Good Practice Advice Notes (GPA2) is entitled; Managing Significance in Decision-Taking in the Historic Environment.

A relevant additional document is also available by subscription; British Standard - BS7913:2013 – Guide to the conservation of historic buildings, published by the British Standards Institute. This document is for guidance only and "*should not be quoted as if it were a specification*".

Although the Historic England book Conservation Basics covers this information in greater depth, BS7913 is published in the UK context.

BS8221:2012 Code of Practice for Cleaning and Surface Repair of Buildings - Part 1

This document provides the principal and broad guidance for the practical selection and implementation of cleaning methods. Although not exclusively so, this has been written to accommodate the cleaning of historic masonry. Table 1 of the standard offers a list of the factors that affect the choice of a cleaning method.

Successful cleaning is usually the result of exploiting a physical or chemical difference between the substrate and soiling. The choice of cleaning techniques is therefore to maximise the discrimination between them and indeed between soiling and patina.

BRE Digest 448 “Cleaning buildings” and 449 “Cleaning exterior masonry”

Published in 2000 by the Buildings Research Establishment. Highly developed for the time the full titles are;

- Digest 448 Cleaning buildings: legislation and good practice;
- Digest 449 Part 1 Cleaning exterior masonry: developing and implementing a strategy; and
- Digest 449 Part 2 Cleaning exterior masonry: methods and materials.

Pollution Prevention Guidance

Pollution Prevention Guidance documents (PPGs, but different to planning PPGs) were published by the Environment Agency and were described thus; “based on relevant legislation and good practice, they will help you manage your environmental responsibilities and protect the environment”. From December 2015 these have been withdrawn, however the responsibilities outlined within have not and the following government webpage will be found useful as to where appropriate environmental protection advice or legislation can be sought;
[https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg]

Before cleaning operations commence, it is normally necessary to establish the destination of surface water drainage. There is a statutory obligation not to permit solid matter or chemical effluent (theoretically this could include pre-treated tap water) to enter a water course, standing water (pond or lake), ground water or coastal water. Avoiding the use of abrasive particulate, poultice or other reagent would greatly simplify any disposal issues, but water cleaning alone will release a high volume of organic and other solid matter.

A permit is required to discharge trade effluent to the sewer (domestic, hotel, restaurant and rainwater run-off is exempt). It is not permitted to discharge significant solid matter (dry paint, abrasive, clay etc), oil, fat or other waste that might impair or block the drainage. Chemical residue must be non-toxic, free of heavy metals and non-corrosive (pH<10).
In some cases neutralisation or dilution may be sufficient to allow normal disposal. Non-compliant residue will require specialist collection and disposal.

Polythene membrane will be found useful for collecting and directing residues and fine-pore woven or non-woven geotextile for separating solids from liquid.

HOW

‘Soiling’ Patterns and Discolouration

The station buildings exhibit, to a greater or lesser extent, all of the following phenomena;

External;

1. Carbon Sulphation/Gypsum Crust/Hydrocarbons

Carbon particulate and sulphur gases are released by the combustion of fossil fuel, principally coal. Incomplete combustion releases oils and tars. The combustion gases are acidic when damp and react with carbonate stones (limestone and calcareous sandstone), lime and cement mortar and render. Calcium sulphate (gypsum) is produced by this reaction and this binds the atmospheric particulates to sheltered areas of the masonry.
The deposit can range from a thin film to a clinker of several centimetres thickness. In the early stages of deposition the residue may be easily removed by light washing or brushing but with time becomes consolidated and hardened. Siliceous sandstones may be less chemically reactive with the acidic gases but the carbon particulate and hydrocarbons seem to assimilate more strongly with the mineral structure and are subsequently more difficult to displace by cleaning than when bound to the surface with gypsum.

2. ‘Traffic Film’ and dry particulate deposits

These may comprise pollution particulates, decayed masonry and wind borne dust, generally deposited on horizontal or inclined detailing or coarse textured surfaces. Such deposits may be disturbed or consolidated by water (see water induced staining) and may contribute to discoloration of the underlying masonry.

3. Organic films and growths

These include algae, cyanobacteria, fungi, lichen (comprising two symbiotic organisms, algae and fungi), mosses, liverworts and plants. Certain of these have a relatively modest direct physical effect on the underlying masonry (reducing porosity and increasing moisture retention) but others are more ‘invasive’ (attaching ‘suckers’, hyphae or roots) or may have excretions capable of chemically altering certain substrates.

Internal and External;

4. Water induced staining, oxidation and efflorescence

Water migrating through the masonry will most frequently darken stone. Soluble matter, including salts may be transported and deposited close (sub-florescence) or on the face (efflorescence) at which evaporation occurs. White efflorescence tends to be described as ‘salt’ (typically chlorides, nitrates or sulphates) though in practice white deposits are predominantly ‘lime’ (calcium or magnesium carbonate) composition. Exposure to air over time may induce oxidation or conversion of minerals within the substrate. This is not normally a solitary effect but may be combined with other water, pollution and organic related mechanisms. Benign colour changes might be viewed as ‘patination’ rather than staining or discoloration.

5. ‘Ghosting’

Substrates, with few exceptions, will attract soiling and patina dependent on its location and relationship with fixtures, fittings and other fabric. This ‘evidence’ on one hand is valuable for historic interpretation but when severe may be aesthetically distracting.

6. Masonry and mortar variation

This might be regarded as ‘natural’ or historic but cleaning may have the result of harmonising (e.g. by removing deposits perhaps older in one area to another) or emphasising the variation by removal of overlying dirt.

7. ‘Sooty’ type soiling

This might be generated from combustive lighting (i.e. candles, oil/gas lighting) but may also originate from external atmospheric pollution. In the case of the Chapel, the uniformity of this has in places been disturbed by condensation and water ingress. Internally, pollution may react with damp calcareous substrates (on window sills or tracery for example) to become ‘sulphated’.


NO REFUNDS

HOW

Practical Constraints

A substantial part of the work could be classified as internal, although with excellent ventilation throughout, much of the work could also be deemed to be external. Cleaning methods must also accommodate the current fixtures and fabric (of which there is a great deal of wood) contained within and the presence of water and the generation of dust must be carefully controlled.

Preamble to the Tests

Before cleaning test trials commenced, soiling patterns were inspected to help determine the historical weathering of the building, areas of concern along with deficiencies of detailing and protection (such as guttering, flashings and drips). After the initial test trials, the exposed and cleaned masonry will now provide clearer observation of the actual condition and will also aid repair and re-pointing. One should be alert to the probability that cleaning may actually highlight some inconsistencies, such as the colour matching of 'original' render and areas of repair.

In evaluating the method or combination that may be applicable, we have a number of considerations;

- Control of substances hazardous to health.
- Control of residues of removal.
- Control of noise.
- Minimising disruption to the substrate and no loss of sound surface.
- Achieving a level of clean likely to be satisfactory to the client and conservation officers.
- Suitability of the removal method to the actual soiling.
- Minimising cost – subject to the other considerations.

Considerations

In identifying methods appropriate for cleaning, we have included the following principal considerations;

- That the chosen method, or combination, might remove the selected growths or deposits
- That the degree of cleaning should satisfy the requirements of the interested parties
- To prevent disruption to the substrate and with no loss of sound historic surface
- Minimise and confine substances hazardous to health
- To control residues of removal
- To control noise
- Minimize cost – subject to the other considerations.

Test Trials Location and Results

There is no single cleaning and restoration solution to fit the complete site, so all the methods used within the test trials would be utilised at different stages of the project. These in turn would be adjusted in terms of:

- Soiling type and levels
- Substrate condition
- Methods utilised
- Heat, pressure and flow rates
- Products and dwell times

The cleaning trials in general were very successful and demonstrate a positive response and results from both the brick and terracotta sections. Although there are areas where the bricks are weaker, more weathered and spalled at high level, with the correct adjustments a balanced result can be created throughout the site and uniformity achieved. It is highly likely that some areas will require greater work than others, for example removing the paints will throw up challenges due to the time and sensitivity factor.

Throughout the site a low pressure ‘super-heated water’ solution would be used to provide an initial clean and remove surface matter before tackling each area, coating or pollutants with the specific, often multi-phased methods and techniques required to sensitively clean and restore the substrate throughout.

The traditional cobbles, red granite kerbing and paving all cleaned up well, but to achieve the desired results they required 3 phases of steam, an application of a specialist oil digester to help breakdown the oil and manual agitation to help loosen for the steam cleaning processes.


Paint and high organic matter growth


Steam and independent Vortech clean


Loose paint and brick façade


Effectiveness of steam clean on loose paint

External brick with carbon soiling

Brick cleaned using Vortech system

Previous condition

Results from multi-phase and method testing


Previous condition


Results from multi-phased and method testing

Salt crustations, adjustment needed

Terracotta with steam/diluted chemical cleana

Test sample clean on terracotta

Close up of diluted restoration chemical clean

Environmental Management Requirements

Managing the waste throughout the delivery of the project is essential, having a system in place that supports the effective waste management of each room's individual pollutants will ensure that not only the building is restored, but the environment is effectively cleaned, and pollutants removed from in the environment within process.

We believe a double chambered class 1 interceptor tank to be the most effective unit to help gather and separate the waste during the project with the extra chamber being highly effective to help further separate oils, paints, general waste and silt, slurry created from the cleaning process. The chamber will be fitted above ground with water directed where best as feasibly practical to the tank by some form of temporary drainage system within which a sump pump will take and separate the waste accordingly.

To help further reduce the waste from the cleaning activity enter the public domain we would then suggest the installation of a temporary aqua drain system along the main gate section to ensure was is caught with the vision that a smaller sump pump could remove the waste to its smaller own sump pump unit.

The environment is not only highly affected by a variety of heavy oils, but large volumes of silt and pigeon foul in the back room passage ways, all of which needs removing and safe disposal alongside the façade restoration project. This waste would need to be treated also safely removed to ensure the environment is safe for future use.

HOW

Initial Specifications

Below are 2 different options, based on the methodologies outlined. As highlighted previously the methods can be adjusted to suit any specific requirements, and the costs are not inclusive of the waiting and post room as they require further assessments. The works for these areas can however be inspected and added to this project when a clear scope has been identified.

As a programme we suggest initially start working on the external front façade and internal main arrival rooms, cobbles and paving areas from February 2018. Working on areas that require specialist restoration rather than paint removal to begin with means that areas that do require paint removal are tackled during the spring months when the paint softeners and methods tested are used within the correct conditions.

It is highly likely that other methods of restoration and products will be used during the project to address façade soiling issues that were not possible to inspect/test in Sep 2017, but we are confident a solution within our current predicted scope will be utilised to deliver the result i.e. paint softeners, dwell times and aggregates for paint removal

Throughout this project, new challenges will arise but we anticipate the programme for works specified (inclusive of the post room and booking office) to be between 4 and 5 months, depending on the issues we encounter.

Within the main waiting environment, we have specified 3 key locations for work.

1. The main room internal façade

2. The main room cobbles, paving and kerbs

3. The walkways to main station and current storage areas, which are heavily painted

Highlighted/outlined area of proposed works

Initial Façade Restoration and Paint Removal Specification

- Sensitive cleaning and restoration of whole front façade along Great Central Street elevation.
- Client to supply scaffolding for external road side access.
- Waste management system to be agreed and installed prior to cleaning on each area
- Moss and rooted plants are firstly to be removed by dry brushing, using brushes of nylon or natural bristle.
- Areas to be cleaned are to be wetted down and kept damp for a period at least 20 minutes before first cleaning and at least 5 minutes before subsequent cleaning.
- Test further methods and identify solutions for new cleaning challenges that were not identified within the onsite cleaning test trials.
- All masonry surfaces (both stone and brickwork) shall be cleaned using the ThermaTech superheated water system to remove organic soiling, loose and lightly adhered particulate and light sulphation soiling.
- The temperature setting shall be maintained at maximum setting, 150°C.
- The pressure setting for brickwork, and sound stonework of simple profile is anticipated will be 75bar. For carved or friable stone-work the pressure will be reduced to no higher than 30bar. At all times the pressure will be no higher, and the distance no closer than achieves an even result without scarring, striation or other loss of sound surface.
- Trial areas of cleaning shall be carried out under supervision, the results of which shall satisfy the client's representative, prior to commencement of the main works.
- Defective pointing or mortar should be removed before cleaning.
- Vulnerable areas (of any kind) should be marked on plans and these plans made known to the operatives and supervisors before the cleaning of each section.
- Removal of graffiti throughout façade.
- Adaptation of all specialist required cleaning methods, products and dwell times to effectively clean and restore throughout.
- Application of relevant paint softeners and paint removal throughout main hall and internal walkway painted section/storage areas.
- Specialist removal of salts with swirling Vortech system to soften and remove calcium build up and staining.
- Removal of oil staining from terracotta low-level façade.
- Removal of all paint from glazed tiling and masonry within back walkway rooms from main waiting rooms.
- Repointing should be carried out after cleaning.
- For rinsing, the distance of nozzle to surface at a given pressure shall be at least x3 that adopted for cleaning.
- The nozzle specified is a Lechler 40034, having a spray angle of 40° and aperture '3.4'
- The work shall, in general, progress from the uppermost level downwards, for each section or elevation.
- Document progress, mark up areas of concern and report to client for further action.
- Building Transformation to provide all further access equipment within costs

Total Project Costs for Materials, Access and Labour £223,734.69

Cobbles, Kerbing and Paving in Main Arrival Waiting Room

- Set up waste management system and absorb all engine / brake oils with use of specialist absorption kits prior to cleaning to remove loose surface oils and deposits.
- Undertake initial 'Super-heated water' steam clean to remove loose surface pollutants.
- Undertake cleaning to all cobbles, paving and kerbing sections.
- Apply specialist enzyme (biological) based cleaner for the removal of oil and grease from porous substrates.
- Allow products to dwell, manually clean, agitate and loosen dirt.
- Repeat steam clean on average 3 times on 1sqm to achieve uniform finish close to original.

Total Project Costs for Materials, Access and Labour £32,387.33

Waste Management

Note: Location of chambers installation, size of chamber and required emptying frequency will help confirm current budgets.

- Identify location for effective drainage with client.
- Review location of 2 stage interceptor tank.
- Install double chamber class 1 interceptor tank.
- Installation of aqua drain if possible along gated sections.
- Tank size selected based on 5-unit cleaning system and litres per min capacity.
- Install aqua drain to direct waste to tank during cleaning.
- Install and set up waste management system for each room: main waiting room, internal cleaning and paint removal.
- Management of waste throughout the cleaning process, adjustment of new waste direction chambers.
- Treatment of pigeon foul with specialist biocide, packaging and disposal.
- Manual management of waste and removal from floors during cleaning process.
- Hire and disposal of skips to remove current silt and floor debris.
- Sampling of silt to determine asbestos levels and relevant disposal methods.
- Emptying of sump on weekly basis or line with tank size requirements.

Initial Budget Costs for Materials and Labour £ 22 - 25,000.00

Further Specification Options

- Turning bricks, which are damaged or spalled to support repairs requirements
- Tinting bricks where calcium staining cannot be safely removed and is deemed to be unsightly.
- General repairs to the bricks and terracotta throughout.
- Stabilization and reinstatement of slipped bricks.
- Repointing in locations required by the client
- Strip and prepare internal steel ready for redecoration.
- Paint removal from internal wooden beams and structures.
- Repainting of current painted areas if the fabric is in a poor condition, but this is not recommended until the current paint has been fully removed and the condition of the substrate inspected.
- Removing paint from gates and redecoration.
- Stripping, cleaning and redecoration of internal glass roof steel frames

Additional Notes

- In general, work to commence at the uppermost level and proceed downwards on a given section of the building.
- Fittings, cables, brackets, lighting fixtures or other paraphernalia not to be retained shall be removed prior to commencement of cleaning. Such items not removed will be appropriately protected or the cleaning regime modified to accommodate them.
- Protection is to be devised and installed for those substrates, surfaces and artifacts not to be cleaned. Particular care must be taken to protect memorials, woodwork and other vulnerable fabric.
- Waste management system to be agreed and installed prior to commencing works.
- Waste water on site will be directed to foul-water drainage and not to surface water drainage, soil, water course or standing water. Rinse water containing chemical agents (algaecide, activated poultice, paint remover etc) must be disposed of in accordance with local water authority bylaws.
- Supply of hot and cold potable water is to be secured on site.
- Water used for rinsing and removal by sponge is to be changed regularly. Foaming or frothing of a wet masonry surface whilst scrubbing indicates incomplete removal of the reagent.
- Solid matter is not to enter the drainage system.
- Application method, application thickness, dwell time, removal, reapplication or supplementary treatment, disposal and all other aspects of handling and use shall be in accordance with the manufacturer's guidance and instructions or at variance to the satisfaction of the client's representative.
- Access to masonry obscured by scaffold or protection will be gained in a safe manner and work completed at the appropriate moment of decommissioning.

Recent/Current Heritage Restoration Projects

Clients we work for / support

Red Bull

LandSecurities

BROADGATE ESTATES

Ministry of Defence

Telereal Trillium

carillionamey

FOUR SEASONS HOTELS AND RESORTS

CLIENT
OMC Ltd

PROJECT
A listed building located in the heart of central London with a conservation area, this building was being restored as part of a redevelopment.
Initially we supported the client through onsite paint testing, identifying type and layers of paint along with the specification development, which was used to assist the client with the planning application and approval of works.
We then delivered the full façade cleaning and paint removal projects using a variety of poultice type paint removal methods and steam in multiple phases to restore the building and then undertook the external masonry repairs before repainting in specific locations.

VALUE
£72,000

CLIENT
Brompton Cross Construction

PROJECT
28 Hill Street - In the heart of Mayfair, the building stands proud with its mixture of Portland stone, London red brick façade and traditional tuck pointing. Highly weathered and eroded through-out, the façade was in a poor state with large areas of damaged Portland stone, high levels of carbon and previous poor repairs were located through-out the facade. We undertook the initial surveys for the client and created the scope of works from which we then delivered the full façade refurbishment project, which was inclusive of the specialist cleaning, repairs, tuck repointing, stone replacement, reshaping, replacement and re-decoration on the building façade.

VALUE
£120,000

CLIENT
Short Construction

PROJECT
The Old Mill - was a listed building located in the heart of Manchester. The client wanted to remove all the internal paint and concrete screed coating to expose the façade as part of a regeneration project. We initially undertook all the paint removal test trials to identify the most suitable method along with all the required waste management planning. Due to the site having current tenants, cleaning methods, dwells times and products were adapted through-out the project duration to suit the onsite requirements as well continued communication with the conservation officer and architect to inspect the condition of the brick once exposed.

VALUE
£35,000

CLIENT
MoD

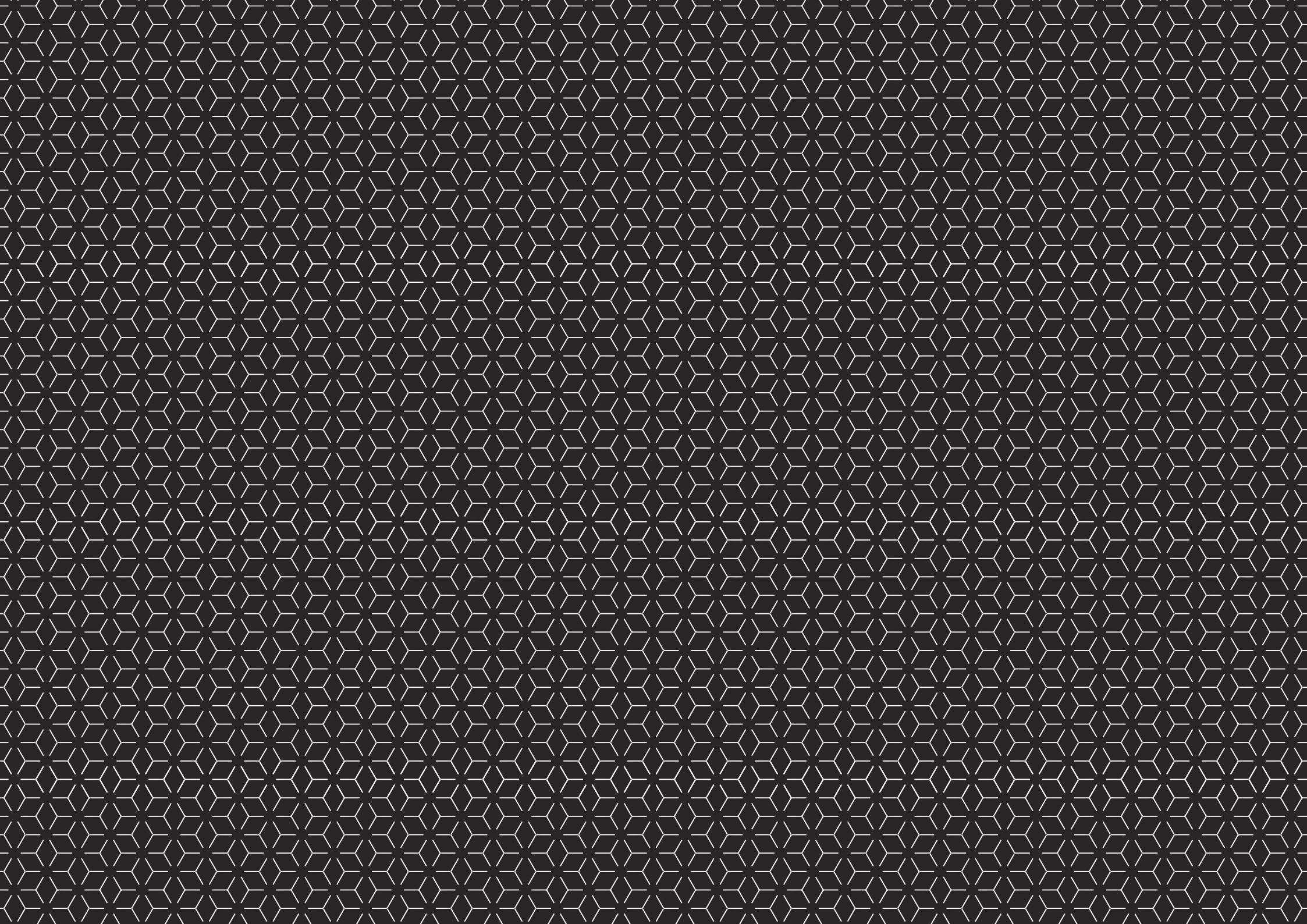
PROJECT
We are the MoD's / Carillion Amey's preferred supplier for façade restoration projects.
From Jan 2016, over a 6-month period, we have provided a round the clock solution to restore and protect the external building façades at Abbeywood, Filton and Bristol. Programs have been continually adjusted to minimise the risk and impact to the 10,000 civil servants who work at the sites. The project has been a huge success with more specialist project works to follow.

VALUE
£615,600

CLIENT
Chaneys Surveyors

PROJECT
Initially we supported the surveyors with the development of the specification, to ensure that the correct cleaning methods were included within the tender. As a rendered façade it was imperative that the organic stained render was also treated with a biocide. The complete external building fabric was sensitively cleaned throughout the estate with an initial water based biocide applied to the complete exterior of the render. A sensitive, 2 phased steam cleaning methodology was then used to restore the whole estate consisting of 369 flats. Once clean we undertook all the relevant repairs, paint and pigeon management installations to help future proof the estate. The project was delivered using MEWP access abselling solutions providing a complete access solution for the client.

VALUE
£236,800



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