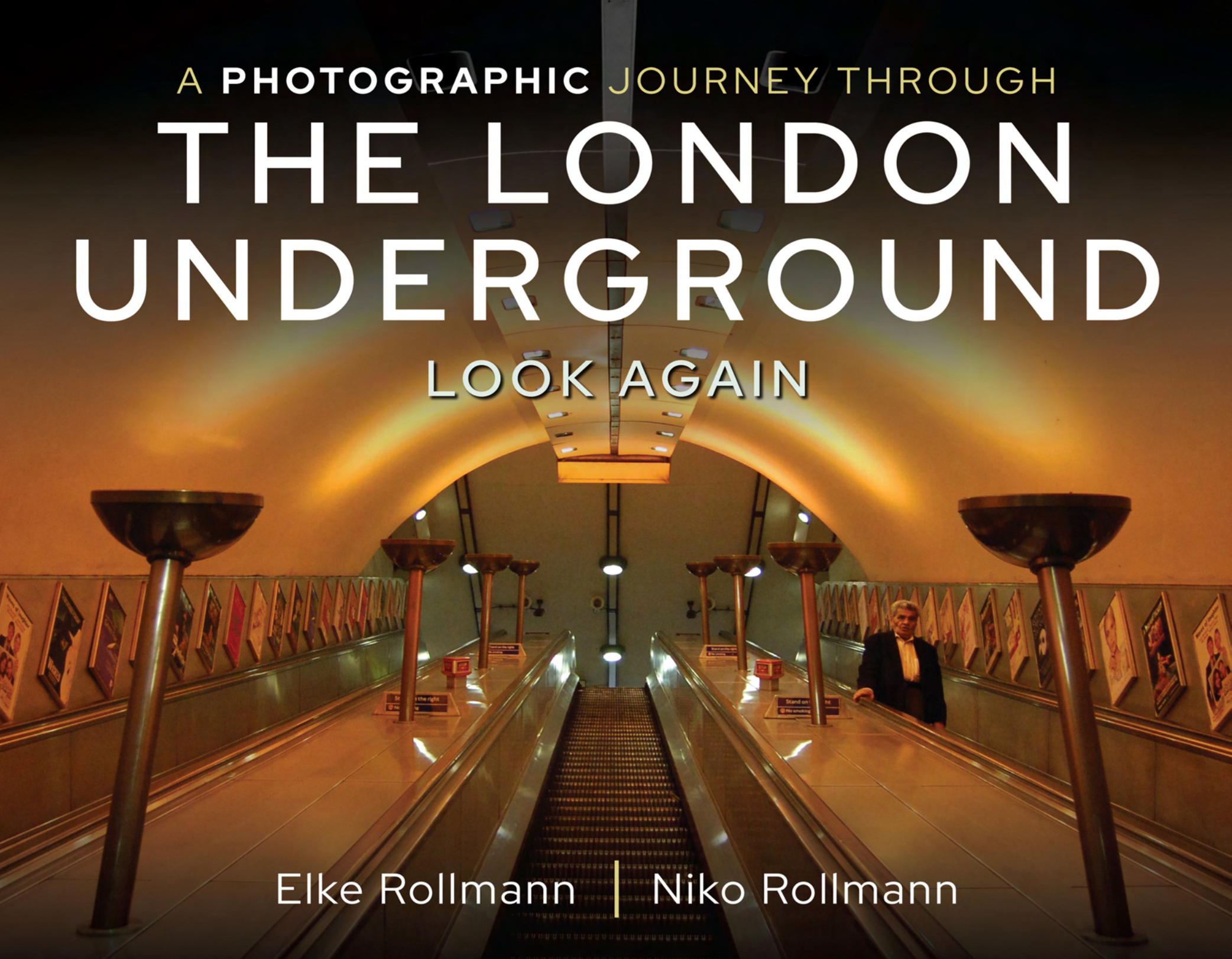
A PHOTOGRAPHIC JOURNEY THROUGH
THE LONDON UNDERGROUND
LOOK AGAIN
Elke Rollmann | Niko Rollmann

LOOK AGAIN

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Elke Rollmann and Niko Rollmann



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This book is dedicated to the people who planned the London Underground and who built the tunnels; to the drivers and the station staff; to those responsible for design and artwork; to the firefighters, rescue services and civilians who have helped save lives at times of emergency in the Underground; and, last but not least, to all the people who helped us with this book.

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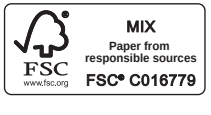


Content

Introduction	7
Architecture	13
Stairs, Staircases and Escalators	25
Ornaments	31
Signs and Signals	36
Safety	43
Time	54
Work in Progress	61
Rush ‘n’ Roll	70
People	79
Trains	88
Buskers	99
Art on the Underground	104
Above Ground	116
Shut down	126
Ghost Stations	135
Timeline	142
Further Reading	143
... And Watching:	146

The London Underground

It is past and future

It is light and darkness

It is fantasy and reality

It is delight and frustration

It is integration and isolation

It is noise and silence

It is departure and arrival

Introduction

The London Underground is the world's oldest metro system. With its mixture of vintage architecture, classical modernism and recent avant-garde station design, it is unlike any other underground railway. In terms of the system's size, it is also one of the world's 'Top Ten'. Opened in 1863, it now consists of 11 lines, 270 stations (plus a number of 'ghost stations'), some 4,000 carriages and over 250 miles of track. Less than half of the network is actually underground. Up to five million passenger journeys are made on the Underground every day, and some 6,000 people work to keep it going. For over 150 years, the construction and maintenance of this system has been a considerable challenge, a complex high-tech operation.

Nowadays, we find nothing special about the idea of descending into the Underground and boarding a vehicle that drives through long tubes. It has become part of our urban routine to such a degree that we can hardly understand anymore how daring and revolutionary the whole idea had once been. In its early days, the Underground found itself confronted with a massive amount of hostility, scepticism and ridicule. There were, for example, significant concerns about possible health problems resulting from regular subterranean travelling (going far beyond the real problem of smoke inhalation). In an age when most people were still very religious the Underground was perhaps a little too close to hell – which had to be somewhere down there.

But why go underground at all? Why make all the effort to dig up London's roads and build a travel system deep beneath its streets? Well, at the time, London was a rapidly growing city – and in terms of traffic, there was just too much growth! Getting from A to B in the inner city had become a nightmare, the narrow roads being clogged with carts, cabs, wagons, omnibuses, pedestrians, dogs, cattle and other animals. Travelling consisted of endless traffic jams, with a huge amount of time lost in the process. It was a hazardous, loud and dirty experience (especially because of the horse manure). Something had to be done! Victorian engineers were already experienced in the art of constructing tunnels, so the new task was essentially a matter of making them much longer and, ultimately, turning them into a complete traffic network. It goes without saying, though, that in those days hardly anyone could anticipate the system's enormous future size.

Initially, the main idea behind the new underground railway had been to link together the city's big surface railway terminals. The person most closely associated with the Underground's

creation was the lawyer and politician Charles Pearson, who campaigned relentlessly for this new traffic system. Unfortunately, Pearson died a few months before the Underground service opened in January 1863. The original line ran from Paddington to Farringdon Street.

It is hardly possible to imagine the challenges faced by the engineers in the Underground's early days. As Henry Mayhew graphically expressed it in 1865:

> 'During the construction of the Underground line, the meandering stream of the Fleet-ditch had to be crossed, at least three times, before the cloacinal flood was diverted from its previous course. Bell-mouthed tunnels had to be made, so as to bring two subterranean borings into one; and stations, which were merely enormous cellars built deep underground, had to be illuminated by the light of day. Moreover, new forms of engines and carriages had to be designed – engines which would evolve neither smoke nor steam, and carriages that could be lighted by gas, so that the usual unpleasant atmosphere and obscurity of railway tunnels might be avoided. Further, it was necessary to devise a special system of signals, in connection with the line, upon which it was intended that train after train should succeed one another, with but a few minutes' interval, throughout the day.'
>
> (Source: *The Shops and Companies of London and the Trades and Manufactories of Great Britain*)

The Underground expanded quickly in the following decades as the advantages of this new traffic system became more and more apparent. However, in those early years, the Tube – as Londoners call it – was not the unified system we take for granted nowadays. Instead, the lines were run by different companies, often operating in bitter rivalry with one another. It was only in 1933 that they came together under the auspices of the London Passenger Transport Board, and a golden age started with the leadership of Frank Pick (more about this later).

Londoners remember well that the system protected them from enemy bombs during the two World Wars: during the First World War, 1915 saw the first Zeppelin raids; 'Gotha' bombers would follow later. Londoners were shocked by these attacks and took refuge in the Underground. Altogether, more than 80 stations were made available as air raid shelters. The air raids during the Second World War, mainly beginning in September 1940, involved large fleets of German bombers that devastated extensive sections of inner London. Consequently, people took to the

Underground again (although the authorities had originally been opposed to Tube sheltering). Some people would not stay in the stations only during raids: having been bombed out, they had nowhere else to go and the Tube became their home. Some parts of the Underground were also used for other military purposes, such as for arms production and as control centres.

The Underground has also witnessed several great tragedies: the wartime mayhem at Balham, Bank and Bethnal Green stations; the Moorgate crash in 1975; the blaze at King's Cross St Pancras in 1987; and the terrorist bombs on the Circle and Piccadilly lines in July 2005.

Although the system neglects the south of the city, in terms of both lines and stations, the Underground is a crucial part of London. Without the Tube, the city would be unthinkable. And for a long time, the system has been an integrated part of the city's history, finding its way into countless documentaries, movies, TV series, video games, short stories – and a large number of pop songs. Despite ticket prices rising year by year, the organisation makes no profit because any surplus is used for reinvestment.

Starting in 2004, a new phase of modernisation, the 'New Tube for London', will see the introduction of 250 new trains and updated signalling on the Central, Piccadilly, Bakerloo and Waterloo & City lines. The trains, to be delivered by the Siemens company, will be fully automated. The programme is expected to be completed by 2033, significantly increasing the capacities of the lines and bringing a considerable reduction in energy consumption. After all, dealing with the rise in passenger numbers is one of the Underground's central challenges: in 2018, there were several days when more than five million people used the system; in 2000, the record number was just half that.

As far as the actual expansion of the network is concerned, the new Elizabeth Line is next on the list as an east–west axis under the city. It is expected to be operational by 2021 and will significantly relieve the Central Line. The other big expansion, 'Crossrail 2', will connect the north and the south of London. Currently still in its planning stages, it is intended to ease congestion on main routes into central London and also give areas like the Upper Lea Valley, Victoria, Euston and St Pancras a boost, while simultaneously improving the South East's travel network as a whole. In addition, an extension of the Northern Line from Kennington to Battersea Power Station is well underway. Finally, there are plans for a southern extension of the Bakerloo Line, taking it to Lewisham and perhaps even to Beckenham Junction. If the plans go ahead, the earliest services could be running by the mid-2030s.



Maida Vale



Southgate


UNDERGROUND
UNDERGROUND
EARL'S
COURT
STATION
UNDERGROUND

Earl's Court

Architecture

The architecture of the Underground stations has never been purely functional – never just a ticket hall, some escalators or lifts, and a platform. Instead, it has always represented the spirit and, equally important, the economics of the age. Victorian pomposity, the elegant twenties, post-war austerity, the arty eighties and some spectacular statements to celebrate the new millennium – they're all there! In their own particular way, London's Underground stations provide a graphic account of the nation's history since the mid nineteenth century. One can only wonder what new stations will look like in 30 or 40 years. Will they symbolise the smart, green urban utopia we hope for? Or could they reflect a disintegrating society threatened by imminent ecological collapse?

An individual station's story does not end when the building work is completed. In a way, stations are like faces. They tell stories. And just like faces, some age beautifully, while others show early signs of wear and tear. Most in need of constant updating are key stations where every day thousands of commuters enter, leave or head for connections to other lines. When a station requires a facelift, the question arises of how to proceed. Many stations sport memorable features, such as art nouveau tiles, art deco lamps or modern mosaics. Will renovation do the trick, or must they disappear? Some recent renovations definitively achieve the 'wow' factor; other stations are simply given a fresher, cleaner look and a much-needed update. Then there are the new stations, where contemporary design has been applied with phenomenal results – as on the Jubilee Line extension (JLE). Its stations are not only spacious and spectacular but also provide a maximum of safety, incorporating the lessons of the 1987 King's Cross St Pancras station disaster.

Open your eyes, take a walk through the Underground and explore! To start with, it's nice to travel around the system for half a day, to randomly check out some stations, look for interesting details, and guess at when they were constructed. Later on, you may want to take a guidebook with you: our favourites are Antony Badsey-Ellis's *Underground Heritage*, David Long's *The Little Book of the London Underground*, Douglas Rose's *The London Underground: A Diagrammatic History* (for all map geeks) and, for long winter evenings, Christian Wolmar's *The Subterranean Railway*. (More suggestions can be found at the end of this book.) And if you are one of those people who need a challenge, see how much of the Underground you can 'do' in a single day.

Physical fitness and a few mathematical equations will help you maximise your performance. Perhaps you want to take a book with you to match that particular experience: Keith Lowe's *Tunnel Vision* tells the story of a man who, as the result of a drunken bet, has to travel through every Underground station in a single day.



Clapham South

Arnos Grove





Canary Wharf

High Street Kensington





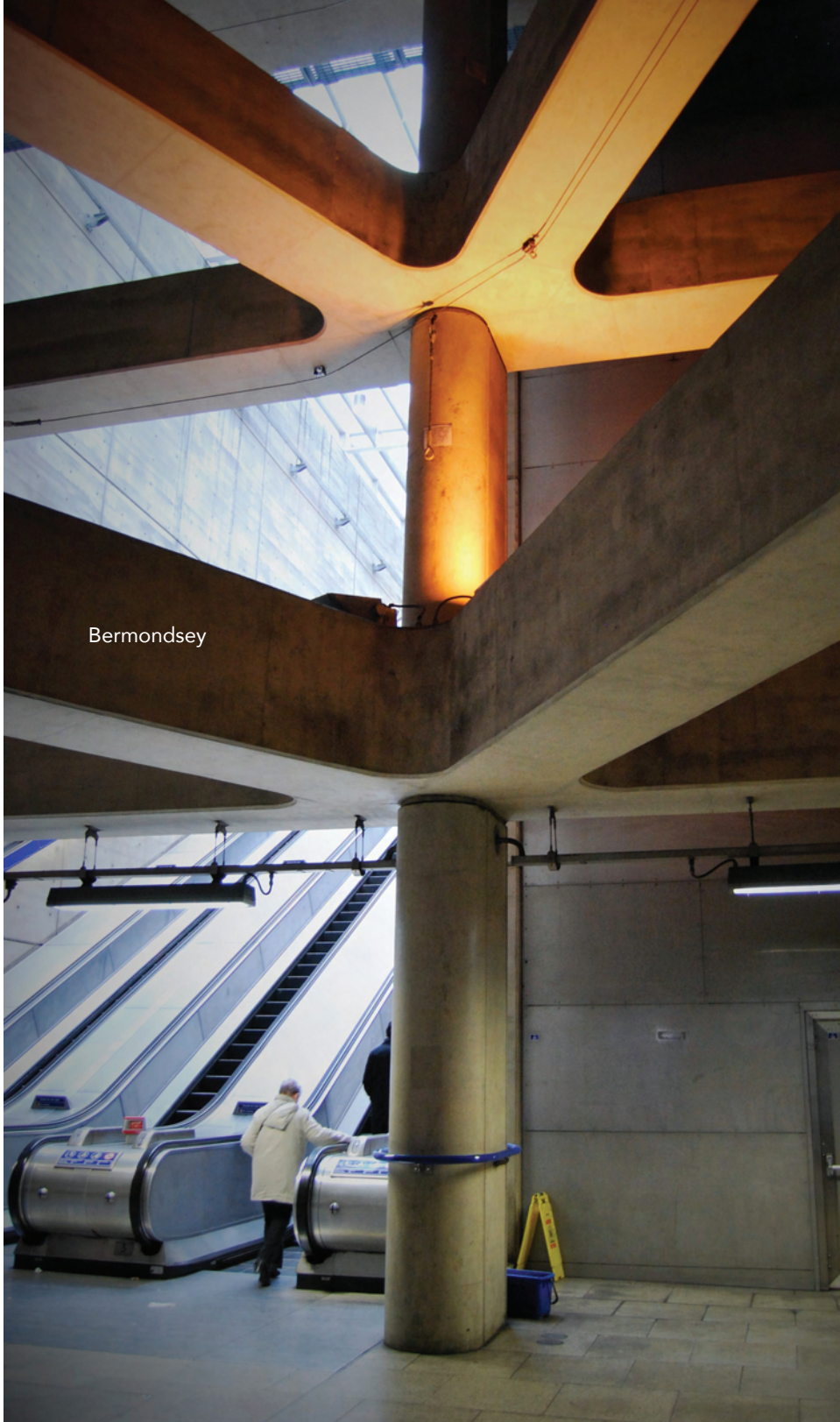
South Kensington



Earl's Court



Turnpike Lane



Bermondsey



Bow Road



Gants Hill

Southwark





St. James's Park

Maida Vale





Westminster



Westminster



Monument



Southwark



Kilburn Park

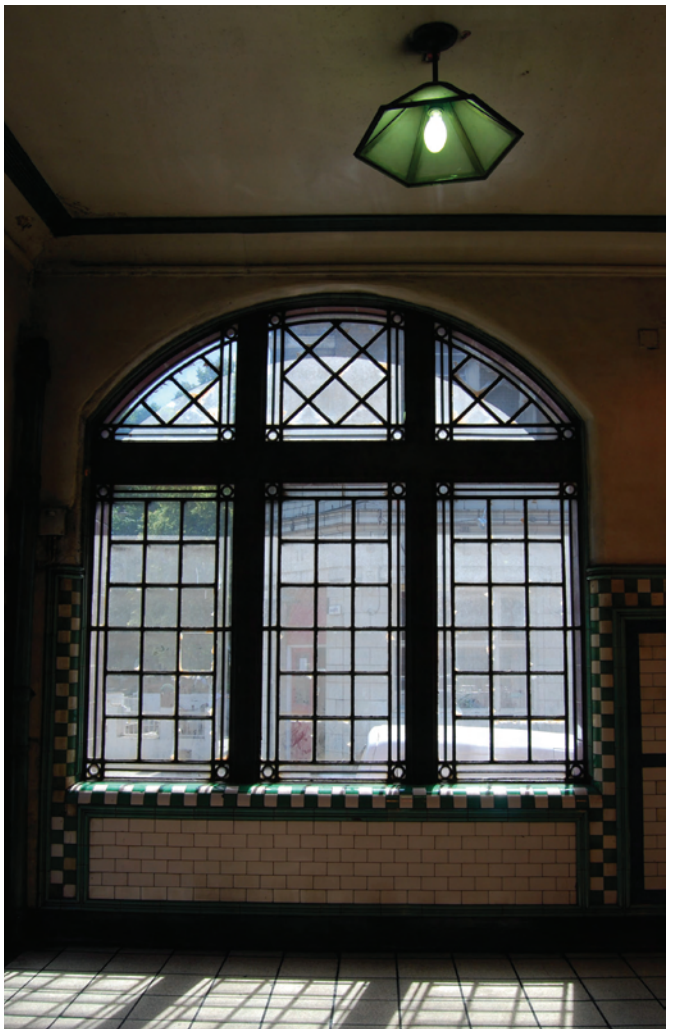


Kilburn Park



Warren Street

Kilburn Park



Stairs, Staircases and Escalators

Stairs and staircases fascinate us. There is a mystery about them. How many times have we observed big-screen villains being chased up or down spiral staircases, and how often have we seen lovers sharing a moment on the stairs away from the hustle and bustle around them? A descent into this underground world is a journey of discovery, offering new perspectives. Most staircases here are labelled 'emergency stairs', and given the number of steps they contain, climbing up is quite a task. With that warning, a leisurely walk to the surface can be a rewarding experience, and you may spot interesting signs and beautiful tiles on the way. In fact, these staircases are much more exciting than the comfortable lifts and escalators – and climbing stairs is an excellent form of exercise!

Then there are the escalators, which were introduced in the Underground in 1911. At the time, they were quite a sensation, and – as is often the case when it comes to new technology – some people were concerned about the safety of these peculiar devices. However, most people quickly appreciated that escalators were safer and more comfortable than lifts – and, of course, they made it possible to shift larger numbers of passengers. The 'Please stand on the right!' rule was introduced in 1921. On the whole, this concept works quite well. But every seasoned commuter occasionally experiences the little nightmare of being in a hurry in the Underground … and finding a bunch of tourists blocking the whole escalator, standing on the right, the left and in the middle. It takes a considerable amount of anger management to deal with such a situation!

Today, there are 440 escalators on the system. The longest, rising 200 feet, can be found at Angel station; the shortest, measuring only 13 feet, was installed at Stratford station. Some of them are design classics nowadays, our favourite being the one at Turnpike Lane. Disaster struck at King's Cross St Pancras station in 1987 when a discarded match fell into a wooden escalator and caused a horrendous fire. The wooden escalators were subsequently replaced with metal ones. The actual speed of the escalators is around 145 feet per minute.

In order to accommodate wheelchair users, people with prams and citizens who have walking problems, Transport for London is working to increase the number of (relatively) step-free stations. At the moment, some 80 stations have been modified accordingly, so there still is a long way to go. If you need detailed information on facilities at individual stations, check out the *Step-free Tube Guide* issued by Transport for London (also available on the internet).





Heathrow
Terminals 1-3



North Greenwich



Balham



Westminster



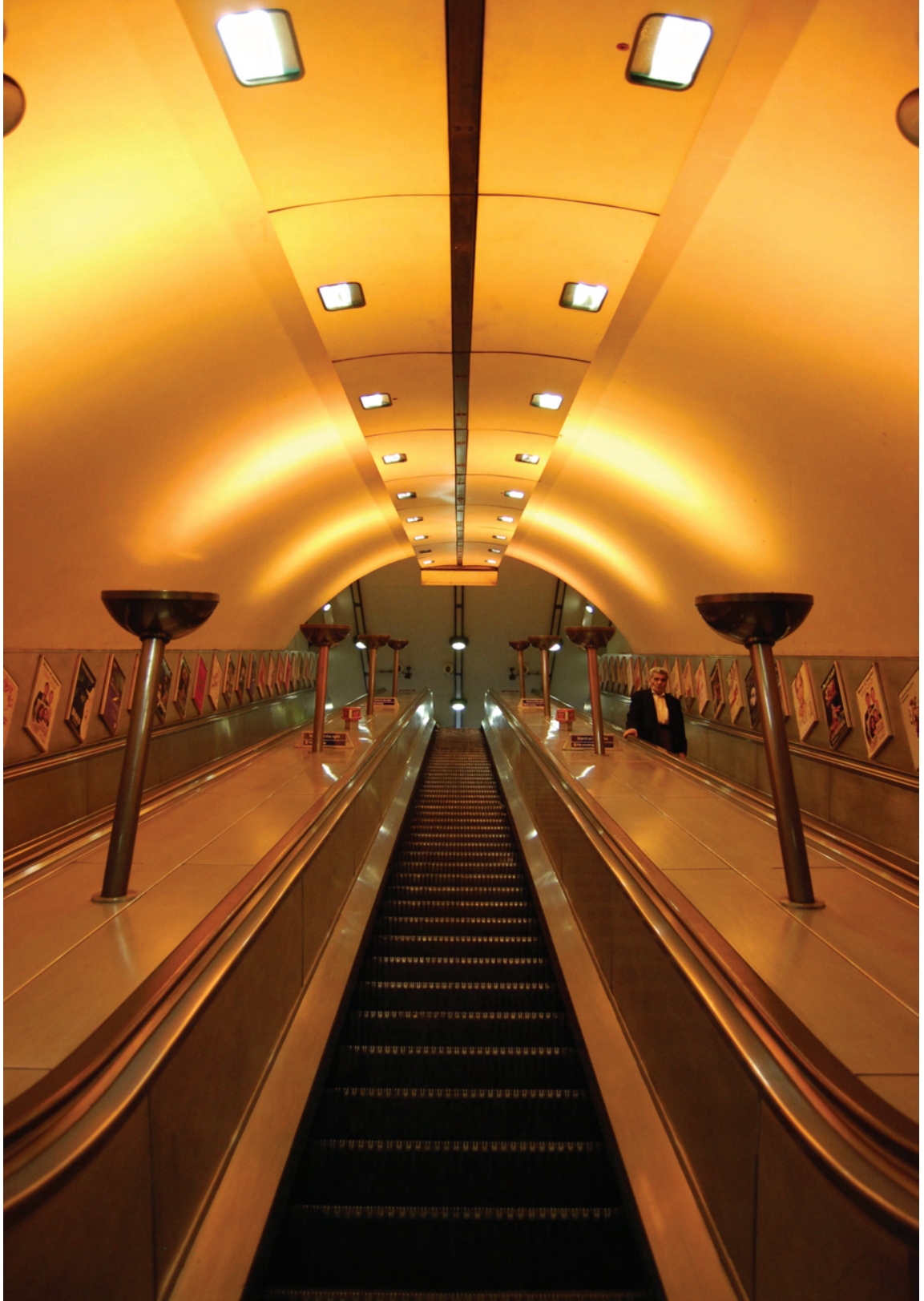
Oval



Regent's Park



Queensway



Turnpike Lane





Newbury Park

Gloucester Road

Ornaments

London's Underground is and has always been much more than simply a traffic system. It has treated its travellers to exciting artworks, elegant designs and award-winning station architecture. Sometimes the beauty can be found in the detail, as with the ornaments. They remind us of an age when infrastructural architecture was not just about mass production but also about craftsmanship, but they are often not appreciated as much as they should be.

Not everything is visible at first glance. It is always worth walking around outside a station or looking at adjacent buildings. A good example is Fulham Broadway. If you stand right in front of the entrance, you merely see a modern station within a shopping mall. However, if you look at the building to your left, you discover the original station with the famous oxblood-coloured tiles and an ornate decoration above. Inside, the building is now a food market, but the original ticket windows are still visible, along with the sign 'To the Trains'. A plaque on the outside wall tells us that this station was called Fulham Green until 1959, when it was renamed Fulham Broadway. A revamp at that time was necessary in order to accommodate people visiting Stamford Bridge Stadium.

Look out for these treasures, and you will be surprised by the enormous amount of beauty around you when travelling on the Underground.



Edgware Road



Barons Court



Belsize Park



Vauxhall

Edgware Road



Regent's Park

North Lambeth

Regent's Park



Aldgate East

Barons Court

Signs and Signals

The subterranean network is an artificial environment: no daylight, no street names, no familiar landmarks; just ticket halls, corridors and platforms. You need direction to know where to catch the train, where to get off, which exit to take. And it has to be fast. Space is limited and people are in a hurry. You don't want anyone standing in the way or walking in the wrong direction. Signs and signals have to give you the right information instantly. Forceful words and symbols are needed, and even advertisements have to constitute a form of minimalist information transmission.

Cutting things to the core is especially important when it comes to safety. Subterranean accidents can – for obvious reasons – be lethal. A train driver missing a signal may put his passengers in serious danger.

Some London Underground signs have become worldwide classics – such as the roundel 'bullseye' logo designed by Edward Johnston. And then there is, of course, Harry Beck's iconic map of the network. The Underground's first maps had essentially provided an accurate representation of the stations' geographical locations within the city. However, these maps looked messy and tended to be somewhat confusing. Beck came up with the idea of turning the map into a piece of geometry, basically consisting of straight lines in different colours, with angles of either 45 or 90 degrees and a few standardised curves. This design looks neat and has become a model for tube maps all over the world. Strictly speaking, it is not really a map but rather a diagram. And it does, of course, not represent the true distances between stations and their positions relative to one another (the map does not, for example, tell you that the distance between Leicester Square and Covent Garden is only a few hundred yards while the distance between Chesham and Chalfont & Latimer amounts to some four miles). But these disadvantages are easily outweighed by the sheer at-a-quick-glance practicality of Beck's design.

As far as the 'visuals' as a whole are concerned, the man who put everything together and basically provided the Underground with what one would nowadays call a corporate identity was Frank Pick. As chief executive officer and vice-chairman of the London Transport Passenger Board, he gave the Underground stations a distinct look, standardising their appearance and hugely increasing their practicality. When he retired in 1940, a lot of things

had changed fundamentally: the way we see the Tube nowadays is still to a large extent the result of Frank Pick's work.

Beyond that, you occasionally spot somewhat cryptic signs – with mysterious letters, numbers and symbols – that are there for the staff maintaining the system or for the drivers. And, finally, there are the nice little extra bits, such as a sign thanking you for travelling on the Underground, or a memorial plaque referring to the network's past.



Bank



Turnpike Lane



Embankment



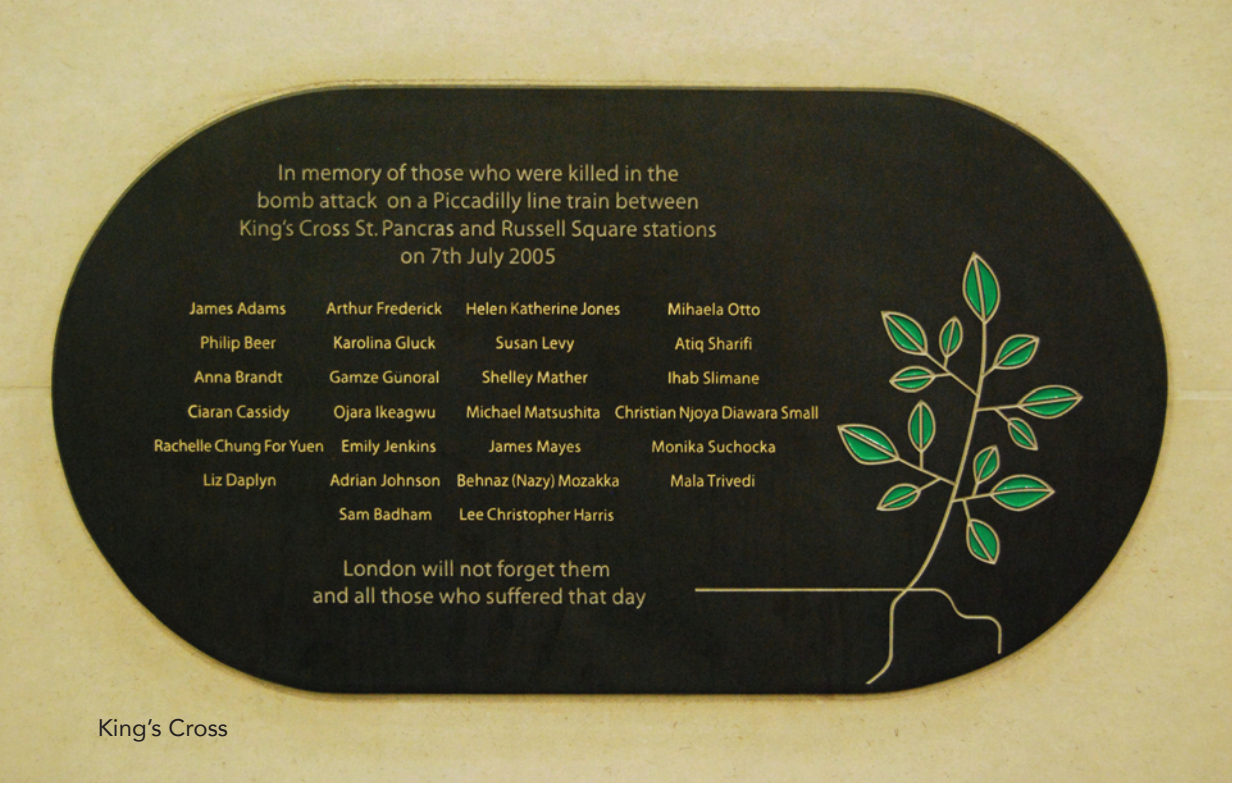
Putney Bridge

Piccadilly Circus



Belsize Park





King's Cross



Holland Park



Finsbury Park


Holland Park



Baker Street





Fulham Broadway



Old Fulham Broadway

Kensington Olympia



On a train



Safety

The Tube is a very safe system – much safer than London's overcrowded roads. But we often subconsciously fear subterranean locations because our instincts warn us of potential dangers lurking there. Furthermore, escape options are somewhat limited when things go wrong underground. It goes without saying that Hollywood movies love to exploit these archaic fears. Don't go into that hole! Stay clear of the cellar! Avoid that tunnel! In reality, though, there have only been three major incidents on the Underground.

In the mysterious Moorgate accident of 1975, a driver crashed into the end of a tunnel at full speed for no apparent reason. A total of 43 people, including the driver, were killed. It was several days before the last body was extracted from the train's tangled wreckage. The post-mortem provided no conclusive answers, and what had gone on in the driver's head will never be known. Perhaps suicidal motives? Or a medical condition leading to a kind of blackout?

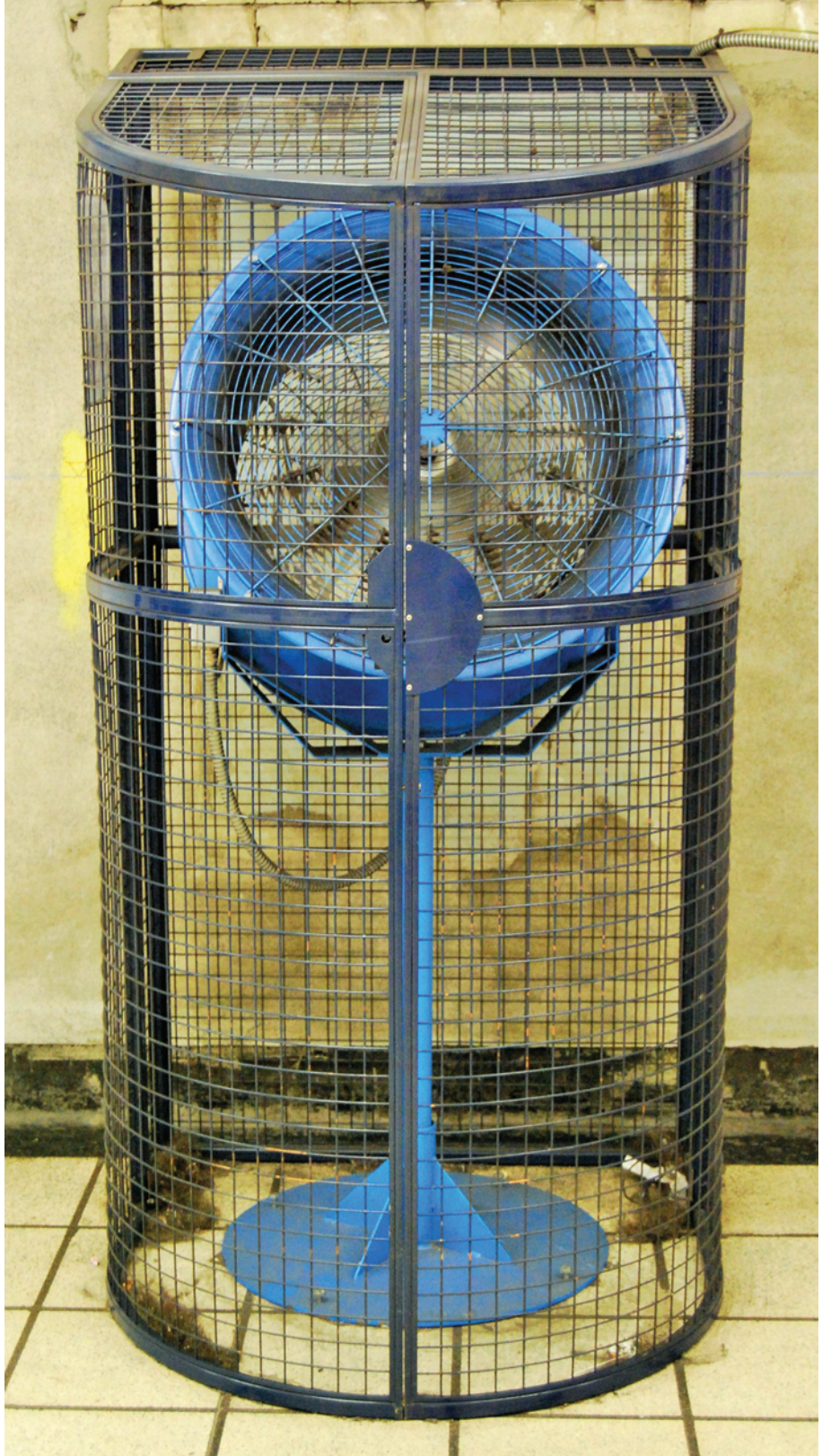
Then there was the horrific fire that broke out at King's Cross St Pancras station in 1987. Apparently, a discarded match had ignited oily dust and refuse beneath an old wooden escalator. Some 15 minutes later, a fireball erupted into the ticket hall at the top of the escalator, causing the deaths of 31 people. A further 100 were injured. One victim could not be identified until 2004 – before that, he had been referred to as 'Body 115'. The investigation that followed the fire revealed that a previously unknown phenomenon, afterwards called the 'trench effect', had been behind the lethal jet of fire that quickly overwhelmed people in the ticket hall. It also became clear that neglect, complacency and mismanagement had ultimately been responsible for this catastrophe. Subsequently, an extensive effort was made to improve the Underground's safety and clean up the whole system.

Finally, there were the appalling terrorist attacks of 2005. The '7/7' bombings (they occurred on 7 July) targeted three Underground trains and a double-decker bus during the morning rush hour. Four Islamist suicide bombers had stuffed their rucksacks with homemade explosives, detonating them when they were surrounded by commuters. As a result, 52 travellers died and close to 800 were injured. The nation was truly shocked by these attacks. Just two weeks later, another group of suicide bombers tried to inflict similar carnage. Fortunately, the bombs failed to go off this time and the terrorists were soon arrested. Other cities, including Moscow, Paris and Tokyo, have

also experienced attacks on their metro systems – the most notorious being the Tokyo incident in which the perpetrators used the highly toxic nerve gas sarin.

Beyond these catastrophes, the number of homicides committed in the Underground is surprisingly low. Furthermore, the safety culture that has emerged in recent decades has also found its way underground. Smoking had already been banned back in the 1980s; 2008 saw a ban on the consumption of alcohol (with rowdy scenes occurring just before the imposition of the ban as people wanted to enjoy a last drink on the tube – resulting in 17 arrests and the temporary closure of six stations). CCTV is almost everywhere nowadays. Special devices have been fitted to prevent people from falling into the gaps between carriages. The latest stations even have special glass walls along the platforms to prevent travellers from falling – or being pushed – onto the tracks, thus eradicating the worst underground nightmare. And then there are all the announcements telling you to stay behind the yellow line, to hold on to the handrail, to mind slippery surfaces, to take care of your belongings, to watch out for pickpockets and, of course, to 'Mind the gap'.

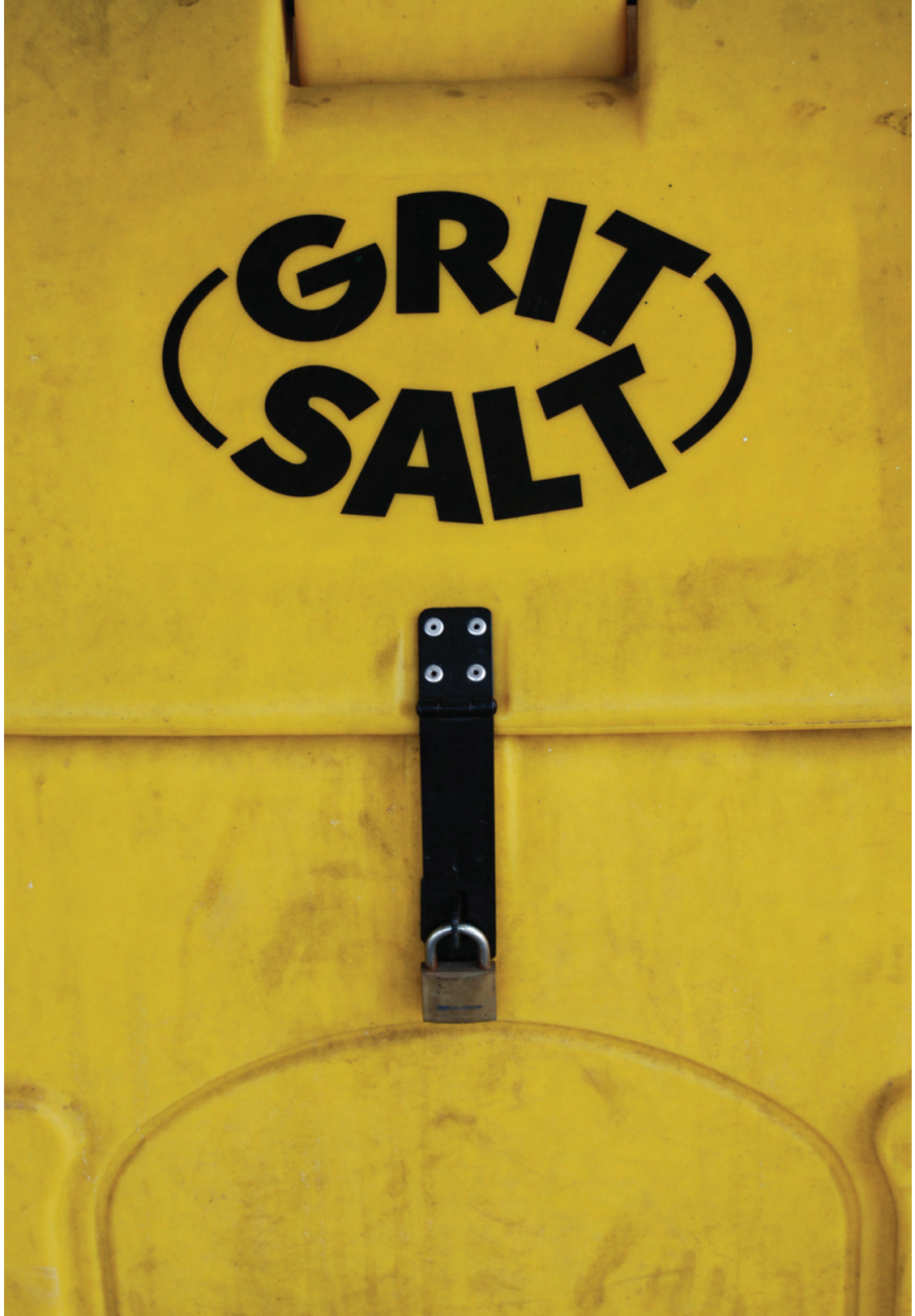
If all that is too much safety for you, you might like to watch a thriller called *Creep*. Then you will make sure that you never fall asleep late at night on an Underground train!



King's Cross



Heathrow Terminals 1-3



Bethnal Green



Baker Street



Baker Street



South Kensington



Earl's Court



Monument



King's Cross



King's Cross



South Kensington



Baker Street



Monument-Bank

North Greenwich



Baker Street



Time

Time is one of the most precious commodities in our fast-moving world. And as we know, time is not always on our side. Although the Underground is supposed to shorten our journeys across the city, time does not always move at the same speed. It can be torturously slow, when you are in a hurry and have to wait for a train. Or it can be incredibly fast: you arrive at the platform, the train pulls in, you hop on, the train races through the tunnel at lightning speed, and a few minutes later you have reached your destination.

The clocks in the Underground are a constant reminder of time. Apart from the practical information, they show an impressive range of beautiful, stylish and witty designs inside and outside the stations. In the early days of the London Underground, the faces of these timepieces were set in wooden cases, mostly oak or mahogany. Some were adorned with beautiful carvings, while others were rather plain. Inside Kilburn Park station you will find a clock in an elegant wooden case on top of a phone box. Clocks in copper or brass cases presented a more modern look, and they were fitted to the walls with wrought iron brackets. If you take a closer look, you will discover the famous 'Roundel' clocks, which sport the Underground logo instead of numbers. A clock at Turnpike Lane station doesn't show any numerals at all, but the heavenly blue colour it brings to the Underground makes up for its rather austere look. Sometimes, these markers of time are displayed in striking surroundings. For instance, a clock inside St James's Park station is set into a carved stone panel that shows a stunning art deco design. Another clock, at Hammersmith station, looks down on us from the top of the building.

But enough of faces. What about the hands on all these clocks? Again, there is a wealth of different designs to explore, ranging from the dainty to the robust.

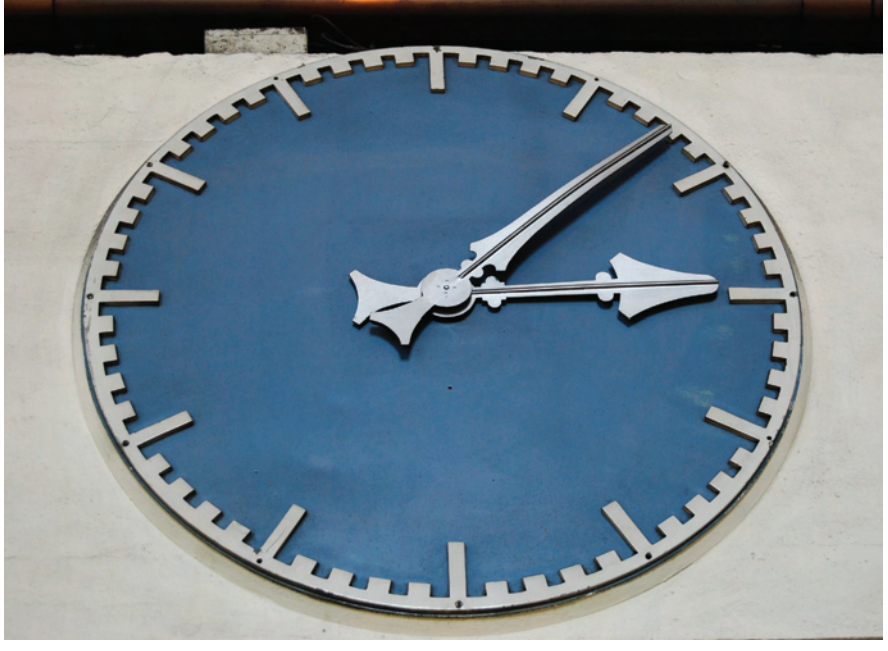
One last word: the London Transport Museum displays a wide range of clocks to buy and to tell you at home what hour has struck.



Earl's Court



Gants Hill



Turnpike Lane



King's Cross



Charing Cross



Uxbridge



Oxford Circus



Temple

Hendon





Tooting Broadway



St. James's Park



Kilburn Park

Hammersmith Station



Work in Progress

Have you ever thought about the human effort required to keep the Underground's huge network going from day to day? Have you ever wondered how many people work in the ticket offices and control centres, on the platforms, on the trains and in the tunnels? Often we only notice them when something big happens, such as large-scale building or refurbishment work – and there is a lot of that. Given that the Underground system dates back to 1863, something always has to be done somewhere. Recent projects include the development of King's Cross St Pancras station and the new Wood Lane and Shepherd's Bush stations. And the Tube is still extending its network, filling in gaps and expanding its tentacles into parts of London hitherto untouched. Work in progress is often loud, messy and dusty, but it also has its own dynamics – enough to warrant a few minutes of the traveller's attention.

Some aspects of the business are completely invisible to the ordinary traveller. There are, for example, the so-called fluffers. These people – mainly women working in small teams – are responsible for cleaning the tunnels at night. Much more rubbish, dust and dirt than one would imagine finds its way into the tunnels. This has to do with sheer gravity, combined with the fact that the tunnels are the lowest openly accessible parts of the city. The draughts within the stations – especially the ones caused by the passage of the trains – ultimately deposit all the bits and pieces at the bottom of the tunnels. And it is there that they pose a fire hazard. Like every type of cleaning, this is a never-ending job for the fluffers … even if much of their work has been taken over by the 'Big Yellow Duster' cleaning train.



Shepherd's Bush



Shepherd's Bush



South Kensington



South Kensington


UNDERGROUND
SANDWICH PLUS
DELIVERY SERVICE
FRESH
COLLECTION
SHOE REPAIRS
KEY CUTTING
WHILE YOU WAIT
DRY CLEANING
LAUNDERED SHIRTS
ALTERATIONS
Improving your station
Sandwich

St. Paul's


No Smoking
Caution
Sudden drop
DANGER
Drop
Fire door
Keep shut
Fire exit
Keep clear

Green Park



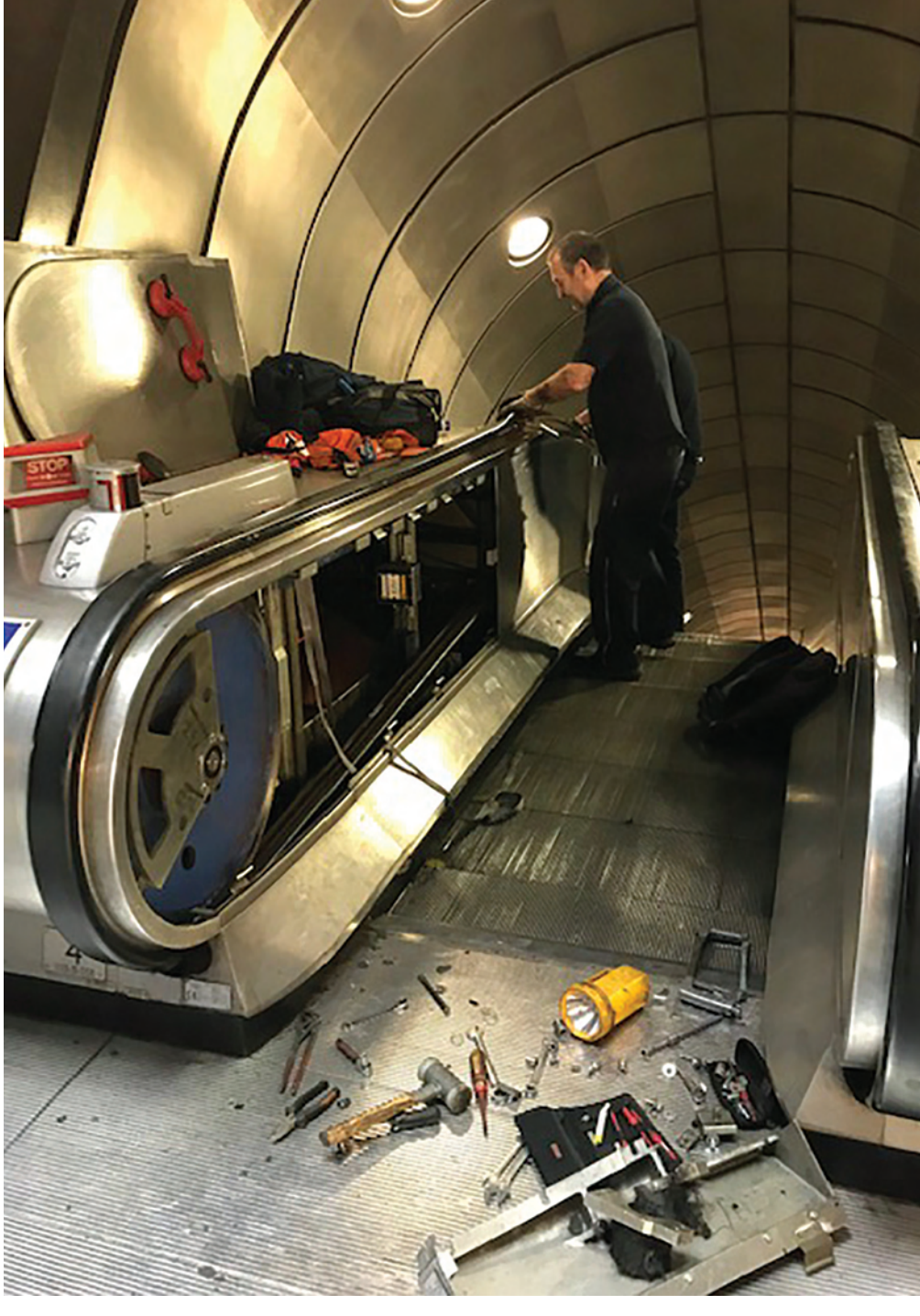
Caledonian Road



Shepherd's Bush



Barons Court



Southwark



Tottenham Court Road

Rush 'n' Roll

The London Underground is all about movement, and that is the only reason why most people use it. They pass through ticket halls and corridors, up and down in lifts and on elevators, along platforms and onto trains. During the rush hour, they flow in a human wave. They dread any time of standstill, whether in a queue at the ticket machine, on a crowded platform or inside a train, that has – for whatever reason – stopped in a tunnel.

In fact, on a single day up to an astonishing five million passengers travel on the 11 lines of the Tube. In 2017, the busiest stations were King's Cross St Pancras, Waterloo, Oxford Circus, Victoria and London Bridge. And the five busiest lines? These are the Northern, Central, Jubilee, Victoria and District lines (at the moment – things may have changed by the time you are reading this).

The introduction of the Oyster card in 2003 – a type of smart card ticketing system – has made life much easier, in particular for working people with their constant lack of time (does anyone still remember the good old ticket?). This was followed in 2014 by contactless card payment, and it is worth mentioning that the Underground was the first system to introduce this novelty. All of these high-tech innovations are part of a tradition that stretches back well into the 1930s, when Frank Pick began to conceptualise the Underground as a steady stream of people that had to be kept moving in the fastest and most efficient way. The dimension of time is intimately connected to a second crucial aspect: volume. The Underground not only has to move people in a fast way; it also has to serve an increasing number of passengers as the city continues to grow. This means essentially three things: expanding the system as a whole, putting more people into the carriages and increasing the frequency of the trains.

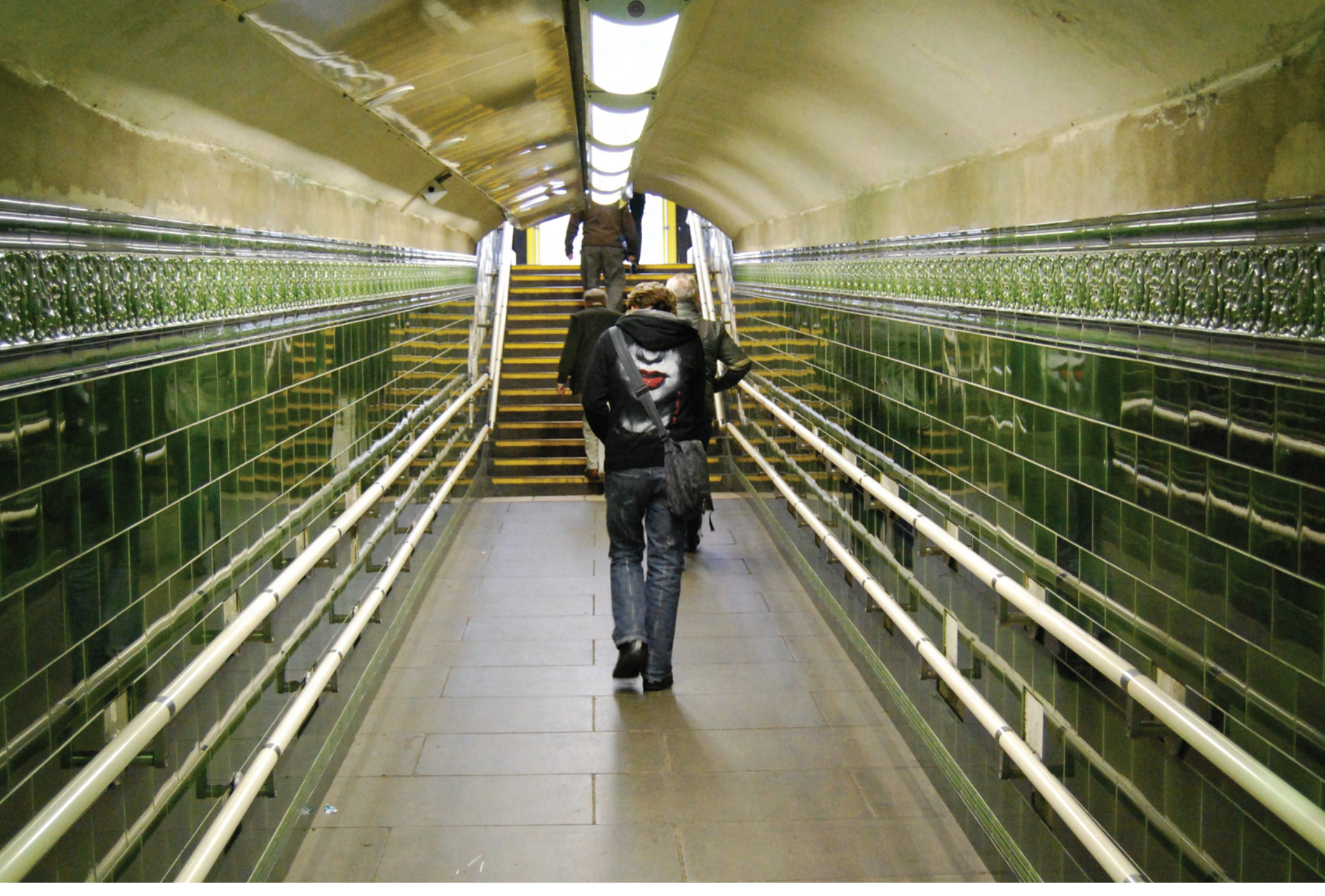
A few people, though, are not primarily interested in fast movement: think of the staff at the gate lines, in ticket halls and on platforms, the cleaners and the vast number of technical staff, who all try to make our journey through the London Underground as safe and smooth as possible. And there are the buskers, the homeless people seeking refuge from the winter cold and perhaps artists looking for inspiration (for example, the famous filmmaker Francis Ford Coppola uses his time in crowded metro trains to watch strangers and build up character sketches from his observations). Some people also simply stand on the platform, ignoring the incoming trains, kissing, having a snack or talking to someone on their mobiles – without blocking the way too much if they're good at it. You don't always have to rush: take a break once in a while!



St. Paul's



Green Park



Regent's Park



Liverpool Street



North Greenwich



Liverpool Street



King's Cross



Hampstead Heath



Whitechapel

People

People take the Tube because it is a practical way to get around, and not in order to socialise while they travel. Regular travellers spend many hours there each week in the company of people they don't know. You can travel the same route from Monday to Friday, yet there will only ever be a few – if any – familiar faces around you. During the rush hour, all these people can be very close to you. But it is unlikely that you will ever talk to any of them.

Experienced Tube travellers simply ignore their fellow commuters. We have no genetic program for dealing with strangers in large numbers – so large that they can be frightening. On a crowded train we look at people's shoes, we look at their ears, we look at their hair, but rarely do we look into their eyes.

There are various kinds of traveller. The regular commuter is a practised sleepwalker, cocooned in a cosy routine and powered by absent-mindedness. Whenever the train pulls into a station, this traveller either glances up or doesn't look at all, knowing automatically when to get off. Attention is dedicated to the smartphone, the newspaper or the book; or maybe he or she just sits there, with eyes closed.

Then there are the strangers, also known as tourists. Their tendency to obstruct platforms by crowding around whoever is holding the Underground map has become part of London's urban mythology. They are the ones who, whenever a train pulls into a station, crane their necks to read its destination. They always seem to be anxious, as if archaic fears of underground travelling are creeping inside them. Might I get lost here? Am I going to miss the station? Where is my wallet?

Finally, there are the 'unpleasant' passengers, who have a number of different strategies at their disposal to annoy you: talking loudly and often very self-confidently on their mobiles (about trivial banalities or things you really don't want to know); eating smelly food (the doner kebab with garlic sauce being top of the league); babbling incoherently or hurling abuse at other passengers (for the fun of it); blocking half the carriage with oversize baggage or several shopping bags; taking up a large amount of space at your expense ('manspreading' being the classic in this context) or coughing and sneezing in a way that ensures a maximum viral spread.

In the age of global warming, there has been a shift in the public perception of the Tube traveller. Back in the old days, somewhere in the seventies and eighties, when the Underground

was quite gritty here and there, you would talk about the people who had to take the Tube every day as if you felt a little sorry for them. Perhaps they couldn't afford a car. Nowadays, taking the Tube is an environmentally friendly thing to do, which adds a certain dose of coolness to the whole procedure. And, of course, the Underground is much shinier nowadays … and its logo is a design classic all over the world. It is also one of the few places in our more and more segregated society where you still find a relatively balanced mix of people from all sections of the population.

There are also animals in the Tube – and not just the usual suspects, like certain types of rodents and insects. There are also elephants, rhinos, whales, birds, foxes, turtles, penguins and other creatures. They are, in fact, all hiding out in the London Underground map. Have a look! And if you can't find them, help is available on the internet. One thing as far as real animals are concerned: in the late 1990s, scientists from London's Queen Mary College managed to identify a particular type of mosquito that apparently only existed in the Underground. So the world's oldest subterranean travelling system has, in a way, produced its own type of evolution. It's all understandable from the mosquitos' point of view: it's nice and warm down there, with lots of people on the move.



Baker Street



Earl's Court



Earl's Court



Earl's Court



Edgware Road



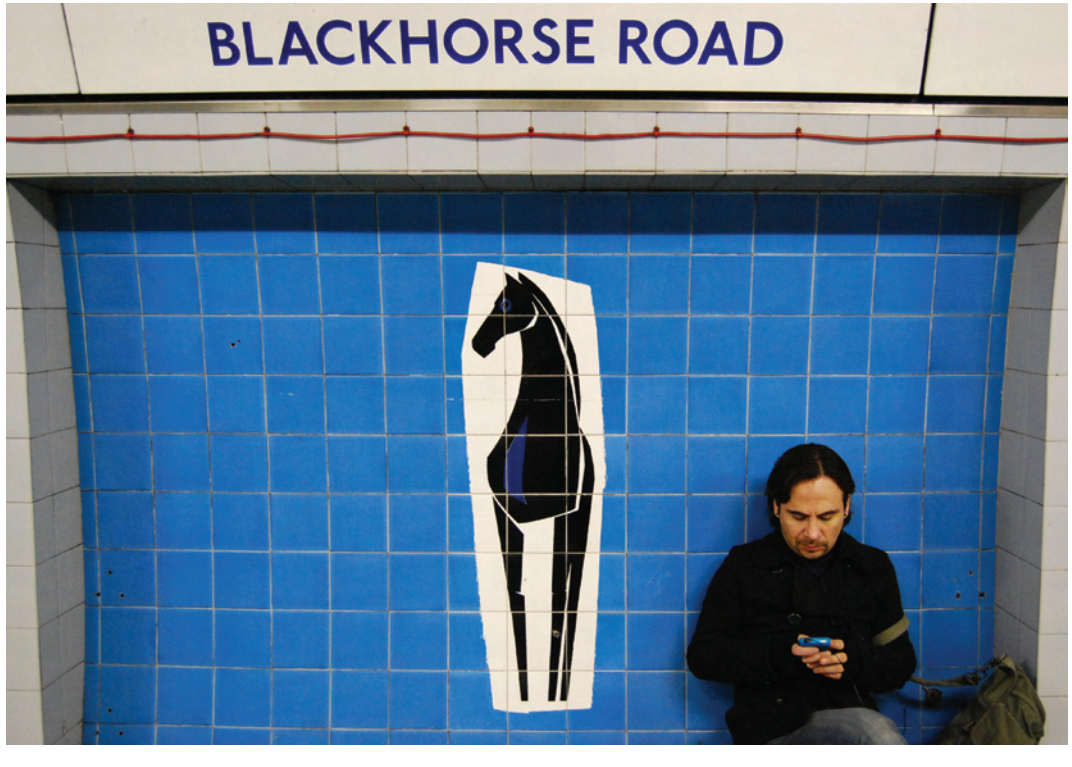
Earl's Court



Seven Sisters



Vauxhall



Blackhorse Road



Victoria Station



Highbury & Islington


Tie Rack
orange
Van Heusen
yo! sushi
Ladbrokes
casino
& sports bar
Krispy Kreme
DOUGHNUTS
impulse
Local
FULLER'S
Mad Bishop & Bear
EAT
SINGAPORE SAM
UNDERGROUND
The Lawn
Cash machines &
Lift to Underground
Initial Transport Services

Paddington



Regent's Park


Northern line
Piccadilly line
Victoria line
Hammersmith & City
Metropolitan and Circle lines
Please queue here

King's Cross



North Greenwich

Trains

Travelling was quite hazardous in the early days of the Underground. Passengers had little space. Carriages were dark and noisy and would sometimes fill with the smoke of the steam engines. The Underground could be a truly hellish place at times, and people were reported to have fainted while travelling (although those running the Tube at the time actually claimed that the smoke was therapeutic for asthma and bronchitis sufferers.) The fumes were sometimes so thick below ground that the drivers couldn't see the signals. The anti-smoke measures taken were not sufficient to deal with the problem, but this did not prevent the Tube from instantly becoming a success as a fast and efficient means of transport. Indeed, some 38,000 passengers were transported on the Underground's opening day in January 1863. Interestingly, it took other nations several decades to follow suit: underground railway systems entered service in Budapest and Glasgow in 1896; Berlin's was next, in 1902.

But back to London. In 1890, the first electric locomotives were introduced, signalling the end of the tunnels' smoky decades (though steam trains would remain in service until the early 1960s). Their development was closely connected to the new concept of the 'deep-level' tube, made possible by the new shield drive method. Since then, many different types of trains have come and gone. Basically, there are two categories of train: the 'Surface' (sometimes also called 'Subsurface') stock, comparable in size to ordinary trains; and the 'Tube' stock, originally intended for the deep-level tunnels constructed with the shield drive method.

Maintaining and modernising the Underground's rolling stock is an endless task. At the moment, about ten different types of train are in operation. The oldest of these entered service in 1972 – despite being constantly in action, the trains tend to be of relatively solid construction and last for decades. As far as the future is concerned, digitisation makes it possible to operate fully automated trains without drivers. But there is, of course, the issue of safety – and the fact that some passengers might find it frightening to travel on driverless trains. Having said that, the Docklands Light Railway has been using driverless trains for decades. People often wonder how fast London Underground trains are. This depends on which line you are travelling on, as there are significant differences, but you will usually be moving at 18 to 22 miles per hour.

Nowadays, the Tube has a smart, contemporary look. If you happen to be an early morning commuter, you will find the carriages bright and sparkling. Alas, as the day progresses, careless

passengers leave things behind. You will find bottles, food wrappings and newspapers. Despite constant reminders from London Underground, things are not improving.

Are you sitting pretty? In fact, you are resting on a woollen fabric called 'moquette'. This is the French word for 'carpet', and indeed the fabric has all the tough, hard-wearing qualities of floor coverings. Before this fabulous invention, one sat on wooden benches. If there was upholstery, the material used was not nearly as durable as the moquette – the seat covers would quickly look tired because of daily wear and tear. Compared to metro systems in other countries, the London Underground probably offers its passengers the most comfortably upholstered seats. It is also definitely a trailblazer when it comes to commissioning designs for the moquette. These have reflected styles and fashion through all decades of the London Underground's life. One of the latest exciting prints integrates images of four London landmarks, so if you have already finished your crossword and checked your smartphone, try to spot these hidden treasures.

It should be pointed out that, in addition to passenger trains, there are certain types of special vehicles in action on the Underground's tracks. They are used for a number of purposes, such as transporting goods, cleaning and maintenance. The best time to 'catch' such trains is usually late in the evening.

Tube trains are not only to be found on the Underground tracks. Check out the 'Village Underground' at 54 Holywell Lane, where you will see four old Jubilee Line carriages on top of an old Victorian warehouse. These are now serving as co-working spaces for artists. Some of the Underground's trains have even made their way to the Isle of Wight: the local Island Line runs from Ryde Pier Head to Shanklin, covering a distance of about eight miles, with a refurbished version of London Underground's vintage '1938 Stock' cars (this is because the ceiling of the line's Ryde tunnel is 10 inches too low for standard carriages). While these old trains may be much appreciated by railway enthusiasts, they have unfortunately reached the end of their service life: as part of a modernisation scheme, they are about to be phased out … perhaps they will already have become history by the time you read this book.

Just one more thing: it's hard to imagine now, but there used to be smoking carriages on the London Underground. As a non-smoker, one tended to avoid them because they were always a little smelly and grey. For smokers, though, it was a pleasure to have the occasional fag on the Tube. In July 1984, smoking inside the trains was banned; 1985 then saw a ban on smoking on the subterranean platforms – which was not always taken seriously. It was the horrendous King's Cross St Pancras station fire in 1987 that led to a complete ban on smoking throughout the whole system.



Near West Cromwell Road



Kensington Olympia



Kensington Olympia



Village Underground



Village Underground



Village Underground


EARL'S COURT
Monument to the
Conquerors of Space
23456
RUSSIAN
SPACE
Valentina
Tereshkova
The first woman
cosmonaut, 1963

Earl's Court



Near West Cromwell Road



Earl's Court



Arnos Grove



Earl's Court



West Brompton

Buskers

Do you fancy listening to live music at odd times of the day and sometimes even into the night? No problem – visit the London Underground and meet the buskers. You will be treated to a huge variety of tunes, ranging from 'Waterloo' to 'Ave Maria', from classical music to opera, from folk songs to rock anthems, from pop and hip-hop to jazz. The musicians play mostly on well-known instruments, such as the guitar, violin, accordion and saxophone, but you may also spot something quite unusual, like a harp or a didgeridoo.

Sometimes you see people lingering around the buskers, lost in their thoughts. Perhaps they are recalling special events in their lives as they listen – maybe their teenage years, their first love….

The music can be very soothing, thus creating a more peaceful atmosphere in the Underground, but it can also be exciting and uplifting. Buskers are often very colourful and interesting to look at, too.

Listening to these musicians, you may wonder why such talents don't grace the stage or screen: their cover versions often sound better than the originals. Having said that, a few buskers actually *do* make it – for instance, Hadar Manor and Jamie West.

Originally, the musicians simply came in, picked a spot and started playing. In 2003, licensing was introduced. Currently, there are 39 pitches across 25 stations. Licences can be applied for in one of the stations or online, where you can also submit a music video. The next step, if you are lucky, is an invitation to an audition, where a panel will make the final decision. Busking is hugely popular with performers and passengers, and considering that about five million people a day pass through the London Underground and may listen to you, what more can you ask for? Some musicians even make a full-time job out of this opportunity provided by the Tube. Once in a while, there is a song you would like to hear again, and the good news is that you can buy a CD with recordings from the Underground. The hit list goes from 'Babylon' to 'Knocking on Heaven's Door'.

A question often asked is how much money the buskers really make. Well, obviously we are talking about secrets of the trade here. And it depends on how good you are and where you play – not all spots are equally lucrative. Perhaps we are talking about an average of £30 to £40 per hour.

Let us thank the London Underground for this gift. As the slogan puts it, 'Let the music transport you.'



King's Cross



Charing Cross


FOAM
L.U.L.
ed buskers are playing at this station legally,
ase show your appreciation.
re information please visit tfl.gov.uk/busking
R OF LONDON

Waterloo



Bond Street



On a train



Baker Street



Baker Street



Charing Cross



Liverpool Street



Tottenham Court Road



Waterloo



Leicester Square

Art on the Underground

Did you ever look at the tiles framing staircases, passages and ticket halls in the Underground? Did you ever look over your shoulder as you were sitting on a bench? It is certainly worth it. You may see a colourful bouquet, a galloping horse or even a portrait of Queen Victoria or Sherlock Holmes. How about an elephant swathed in red light, or a majestic Zeppelin floating on the wall in front of you?

Art has for a long time been an integral part of the Underground. Especially since the days of Frank Pick, it has been part of the Underground's ethos that the whole system is not merely a functional means of mass transportation. It also needs a certain look, a certain style, certain aesthetics – for the stations, the trains, the signs, the posters and many other things that travellers see on their journeys. Since the 1980s, artworks have been specially commissioned for the Underground. The current programme, called 'Art on the Underground', was established in 2000 and gives artists the chance to have their works seen by (literally) millions of people.

Take a closer look. The art comes in many different styles, ranging from art nouveau to pop and abstract art. It often reflects the age of the stations, and also refers to local landmarks and sights. Many stations are dressed in beautiful tiles, displaying historic, traditional and modern designs. Murals adorn walls, telling us about urban life and ethnicity. Special events related to the Underground are commemorated in mosaics, for instance at Maida Vale and King's Cross St Pancras. Sports fans will be delighted by spotting the images of cricket players on the walls of Oval – and who could ever forget the stunning sculpture of an archer, high above East Finchley station? Another highlight can be found at Uxbridge station. If you arrive there on a sunny afternoon and walk towards the exit, you will see the stained-glass window, with its heraldic images, at its most impressive. And don't forget the enormous display of posters everywhere, informing, warning and entertaining us. If all that is not enough, there are regular exhibitions on a disused platform at Gloucester Road, and many more projects are constantly being developed to open our eyes to new experiences. In a nutshell, the London Underground is a museum of the past, present and future, with no entry fee. The art on display is simply a bonus added to enhance our daily lives.

It should be added that other nations have also given art in the Underground a try. Moscow's metro, for example, is characterised by spectacular architecture and outstanding artwork. It was intended as a propagandistic showcase for technological and social progress in Stalin's Soviet

Union. Every citizen could feel like a little tsar as he walked through metro stations that looked like palaces. The metro is still a must for every Moscow visitor. Another (perhaps unexpected) example is Oslo's metro, where the city's underground rocks and colourful artwork have been combined in a breathtaking way, to make it the world's longest art gallery. Mexico City's metro also features remarkable art, and many stations have been decorated with large murals.

And there is not only art on the Underground: there is also poetry. Since 1986, the 'Poems on the Underground' programme has introduced millions of people to the delights of verse, featuring a wide range of poetry within the trains. If you want to read up on the ones you may have missed, check out Penguin's collection of more than 200 poems from the scheme (published in 2015).

Gloucester Road





King's Cross



Charing Cross



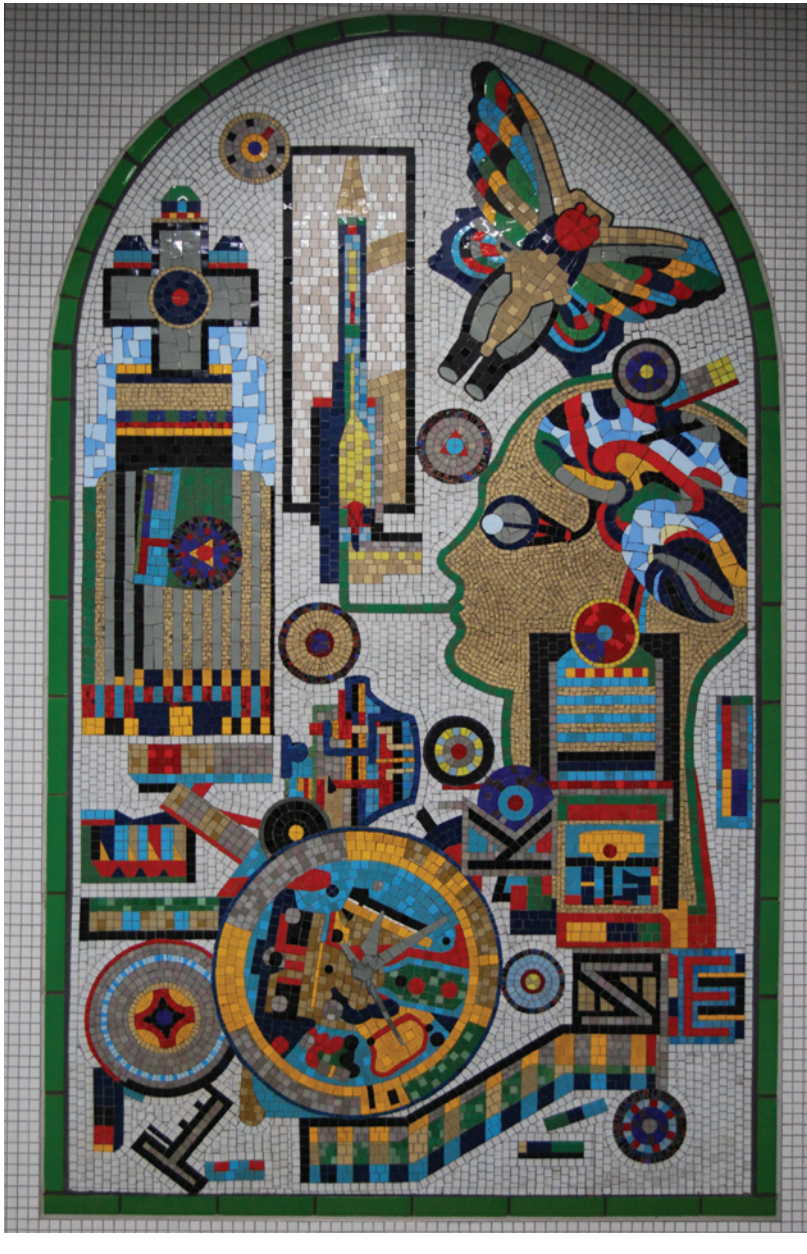
St. James's Park



Charing Cross



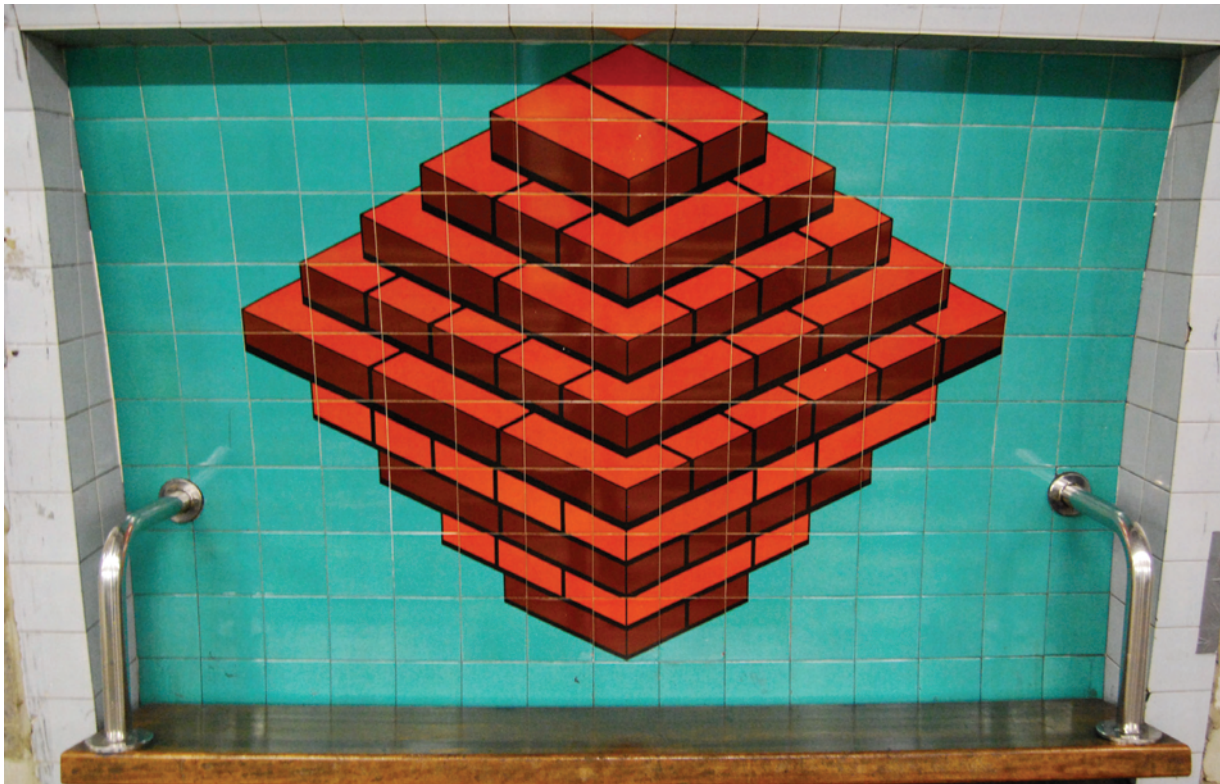
Marble Arch



Tottenham Court Road



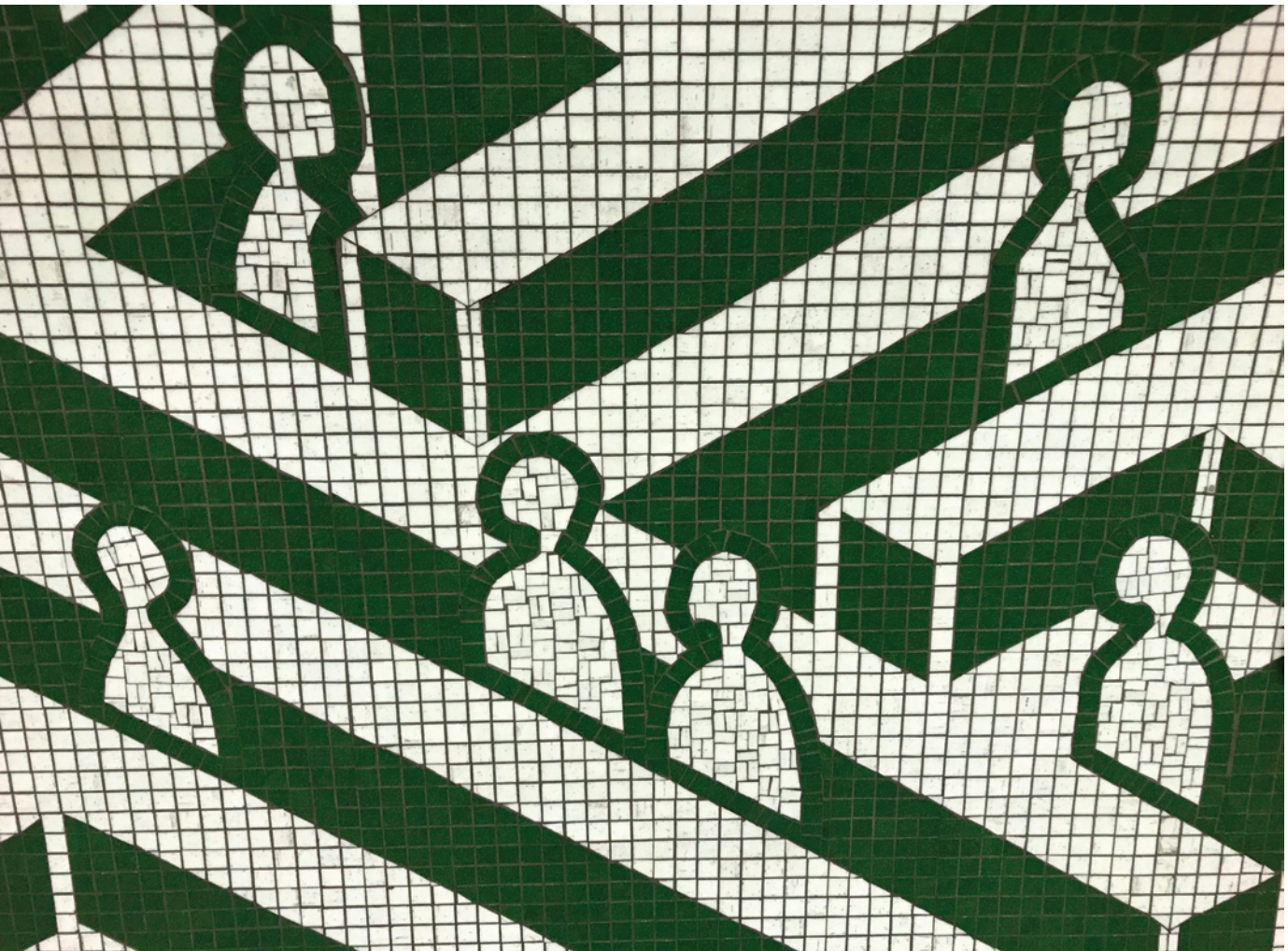
Tottenham Court Road



Brixton



Oval



Oxford Circus



Finsbury Park



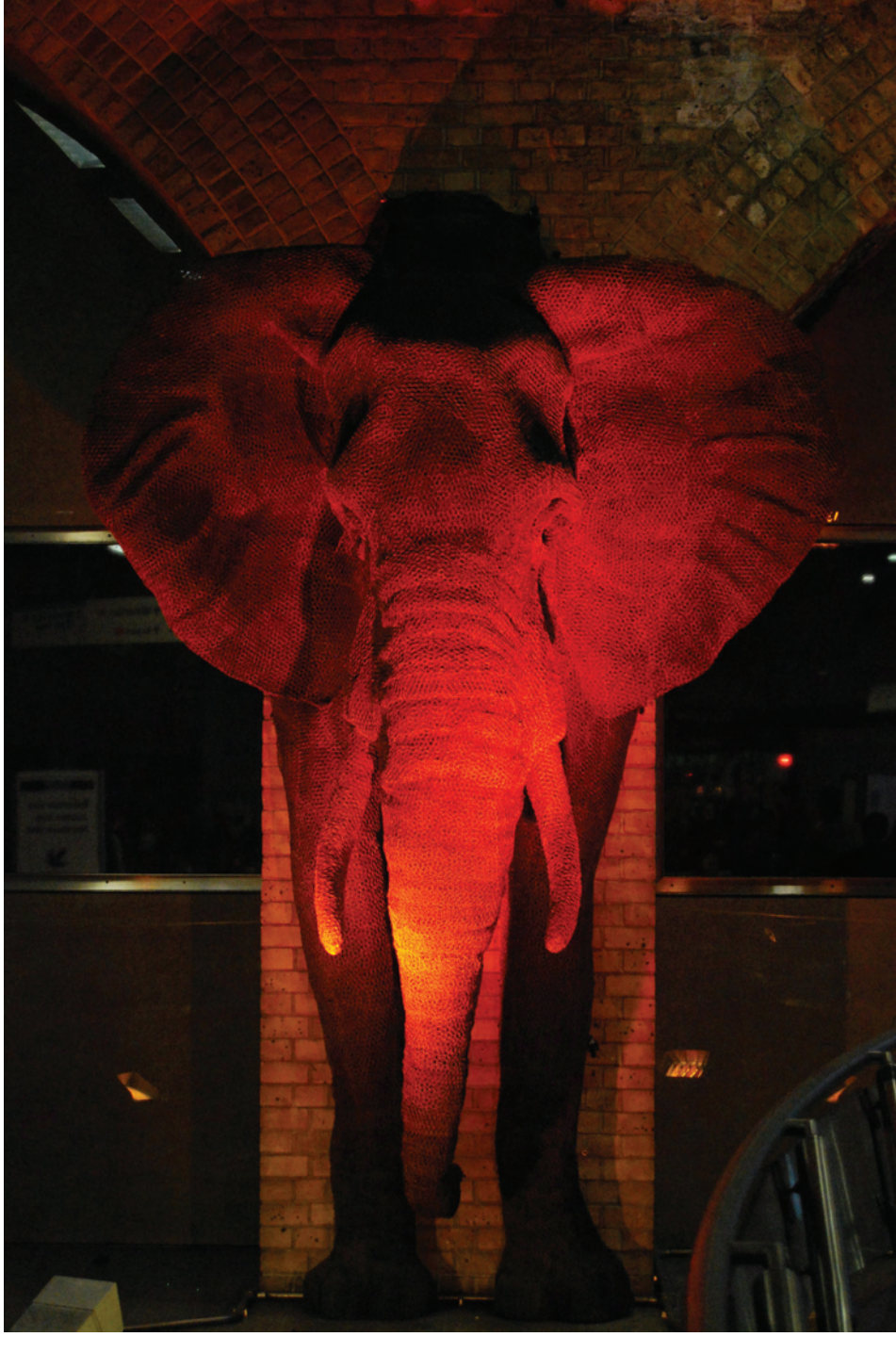
Finsbury Park



Euston



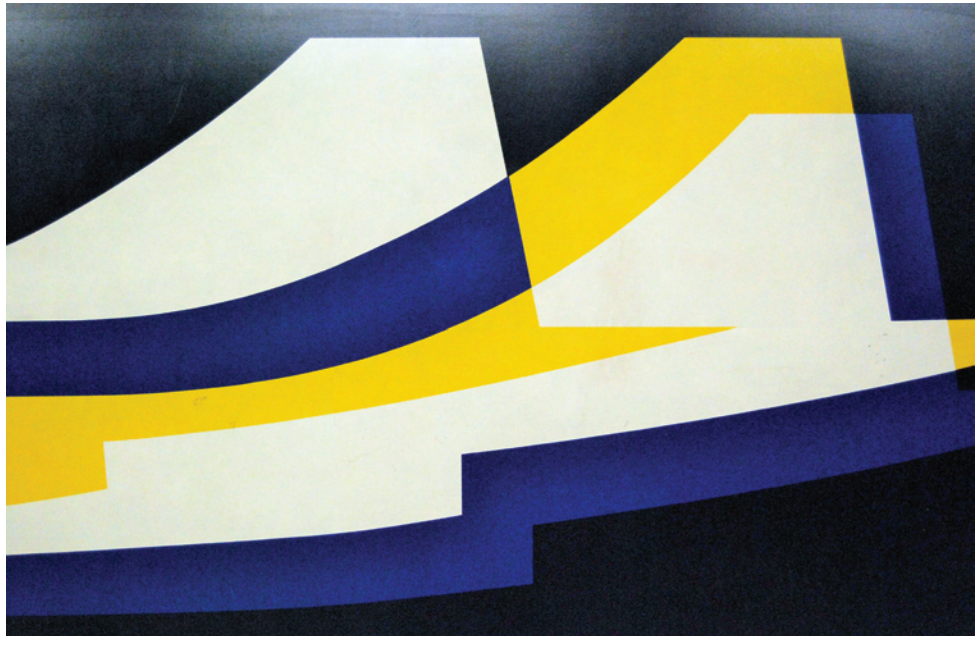
East Finchley



Waterloo


Way out
Town Centre
Shopping Centre
Sweet Express
OLAPLEX
VTU

Uxbridge



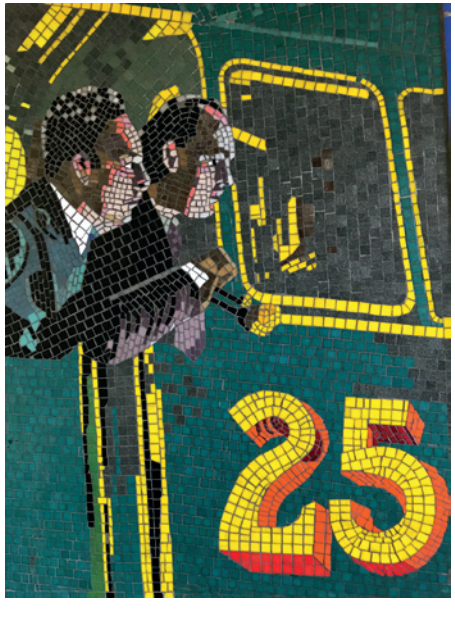
Heathrow Station



Leytonstone Station "Greenwich Mural Workshop, 2002"



Hatton Cross



Leytonstone Station "Greenwich Mural Workshop, 2002"



Brixton

Above Ground

The London Underground is not completely underground. More than half of it is actually overground. This is because building tunnels is always quite expensive and often involves technological challenges (especially when confronting sandy, unstable ground or a high groundwater table). Furthermore, issues like access, safety and maintenance are always easier to deal with on the surface. Consequently, you only go underground where you have to: in packed inner city centres where there is simply no space for a surface railway. Originally, the 'cut and cover' method was used to build the Underground. It involved digging up the whole street, building the tunnel, covering everything over and restoring the surface. Later on, the shield drive method made it possible to build tunnels underground without too much obstruction on the surface.

The entrances to all stations, whether underground or on the surface are, of course, always at street level. Some of them have been squeezed into the surrounding architecture and display no distinguishing features. Others, however, are true temples of architecture. At the moment, more than 70 Underground stations have buildings that are on the 'Statutory List of Buildings of Special Architectural or Historic Interest'. A further five have entrances that are parts of listed buildings. The legendary Underground architects Leslie Green and Charles Holden were responsible for more than 90 stations, Green being active at the start of the twentieth century, while Holden had his great days in the 1920s and 1930s. These stations are nowadays seen as true classics: Arnos Grove, Balham, Chiswick Park, Clapham Common, Colliers Wood, Gloucester Road, Mornington Crescent, Russell Square and Southgate. But also check out stations like Canada Water, Canary Wharf, Fulham Broadway, Great Portland Street, Kennington, Perivale, Stratford and West Acton to get the bigger picture. We wonder which future Underground stations will one day join their listed colleagues.



Southgate



Marylebone Station


ARNOS GROVE
RVP
No parking
Offenders will be prosecuted
2
No parking
Offenders will be prosecuted

Arnos Grove



Clapham Common



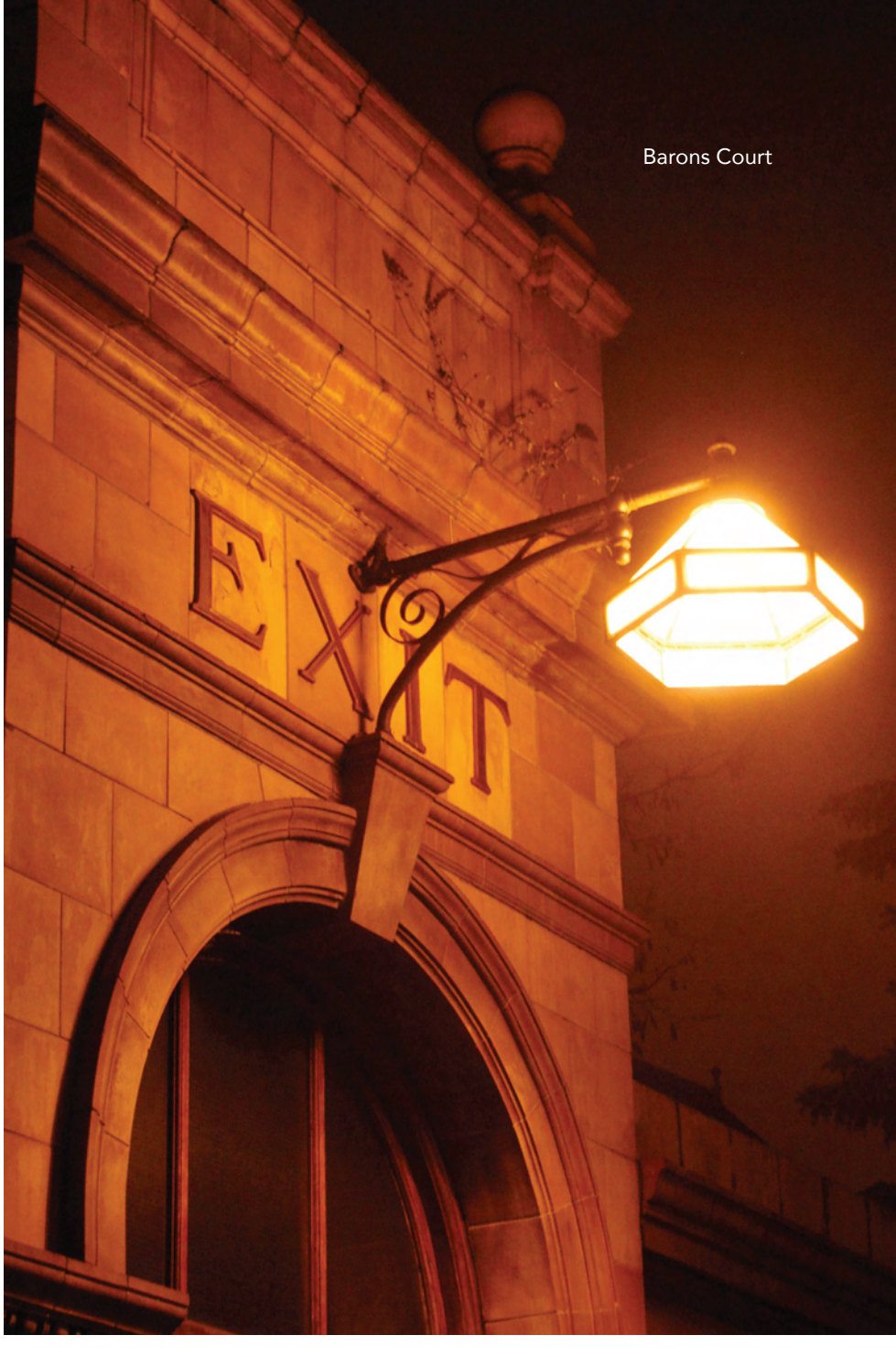
Chiswick Park



Earl's Court



Chiswick Park



Barons Court



Kensington Olympia



Mornington Crescent



West Kensington

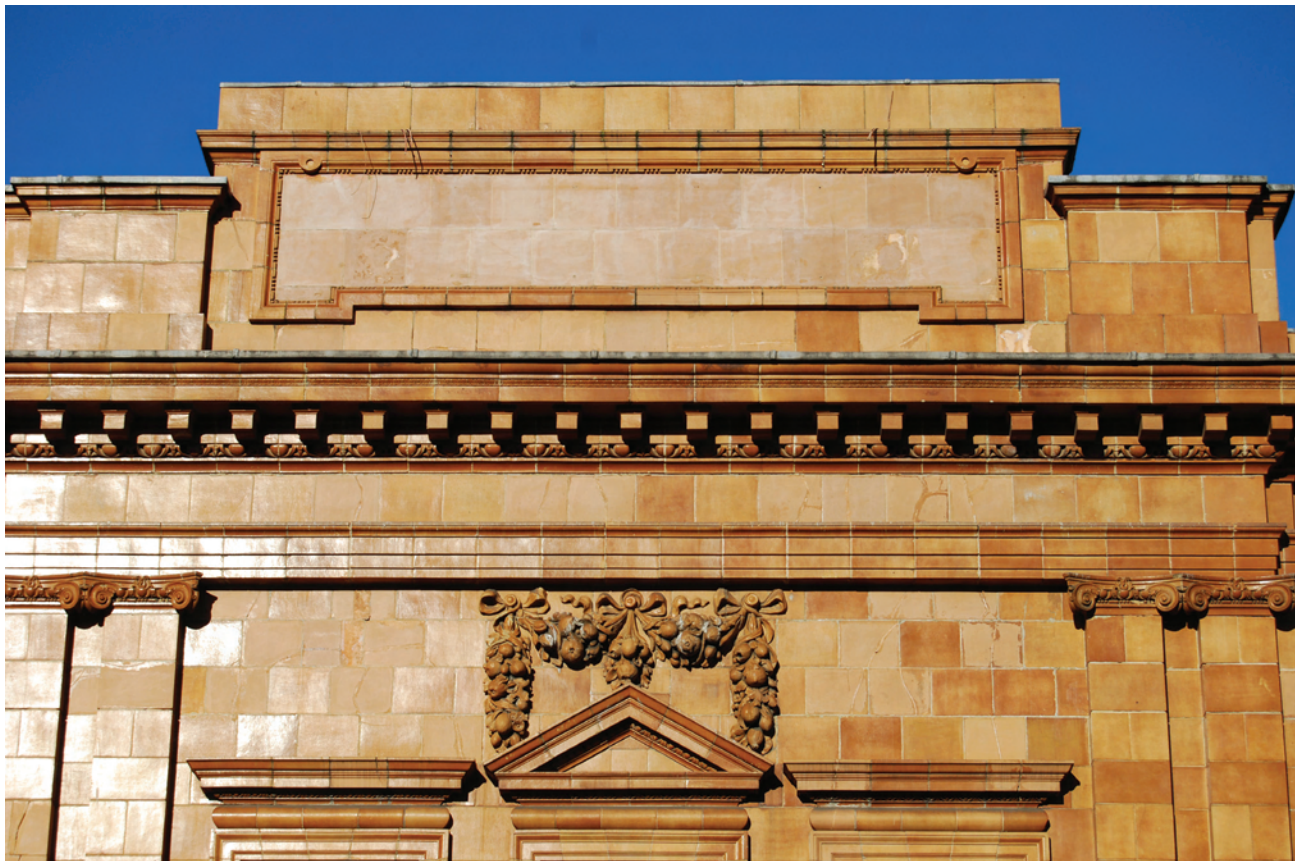


Hounslow West



Kilburn Park

Aldgate East

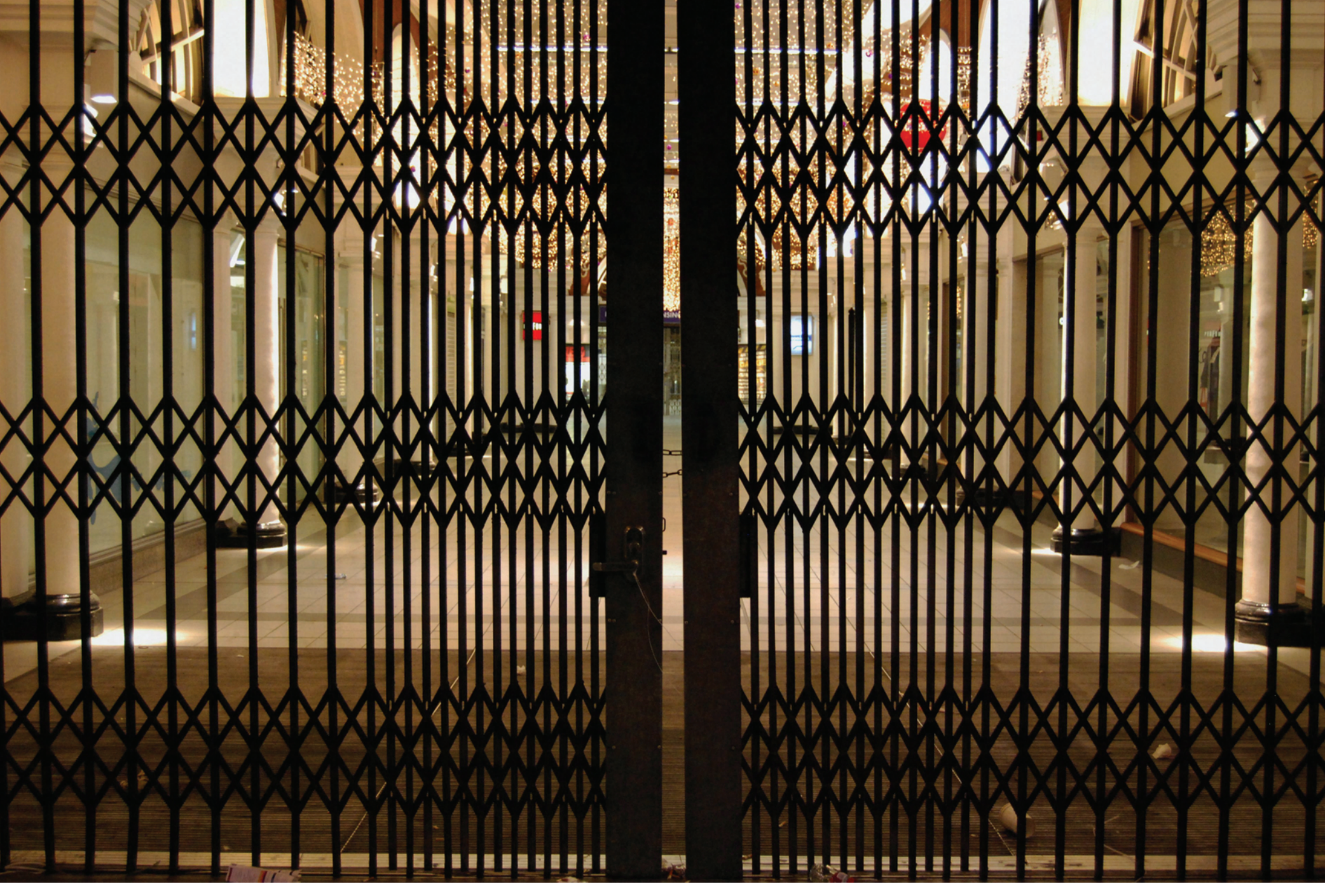


Shut down

On a single day every year London Underground is shut, and that is Christmas Day. All stations are locked up, and you will here and there see people lingering around the entrances, staring at this phenomenon with disbelief. It seems as if everybody is moving in slow motion. No hustle and bustle, no pushing and shoving, just people walking about town at a leisurely pace. On such days, it really strikes you how important the Underground is for getting from A to B within London. And it is not only the Tube that is out of action on that particular day – buses are not running either! You may discover then that there is life without public transport, even if it is only for one day of the year.

The locked-up stations have their own appeal, and it is rewarding to take a closer look. In some cases, there are elegant wooden doors. Elsewhere, you may also find solid metal gates. In most cases, though, we are talking about different types of bars and shutters.

There are, of course, also occasional closures due to industrial action, and for necessary repairs and maintenance work. The expansion of the system may also lead to stations being shut down temporarily. Some stations are also closed during weekends. And, just as these lines are being written, a virus called Corona is leading to a partial shutdown of the system in several nations. Already, the Underground is reducing its service as more and more people heed the call to stay at home. We don't know what the virus ultimately holds in store for London. But it is already quite certain that a new chapter is being added to the Underground's history.



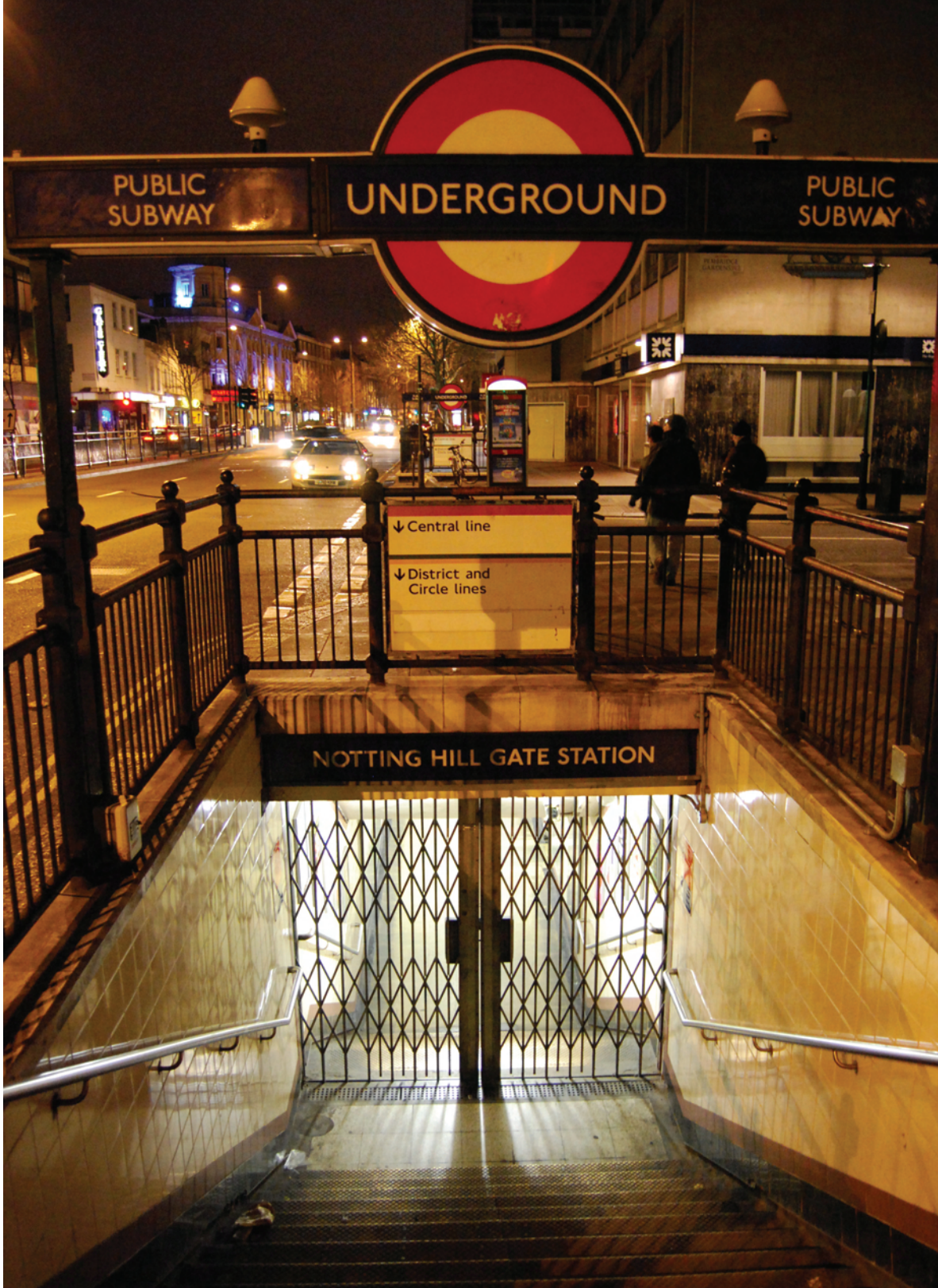
High Street Kensington



Goldhawk Road



Barons Court



Notting Hill Gate



White City

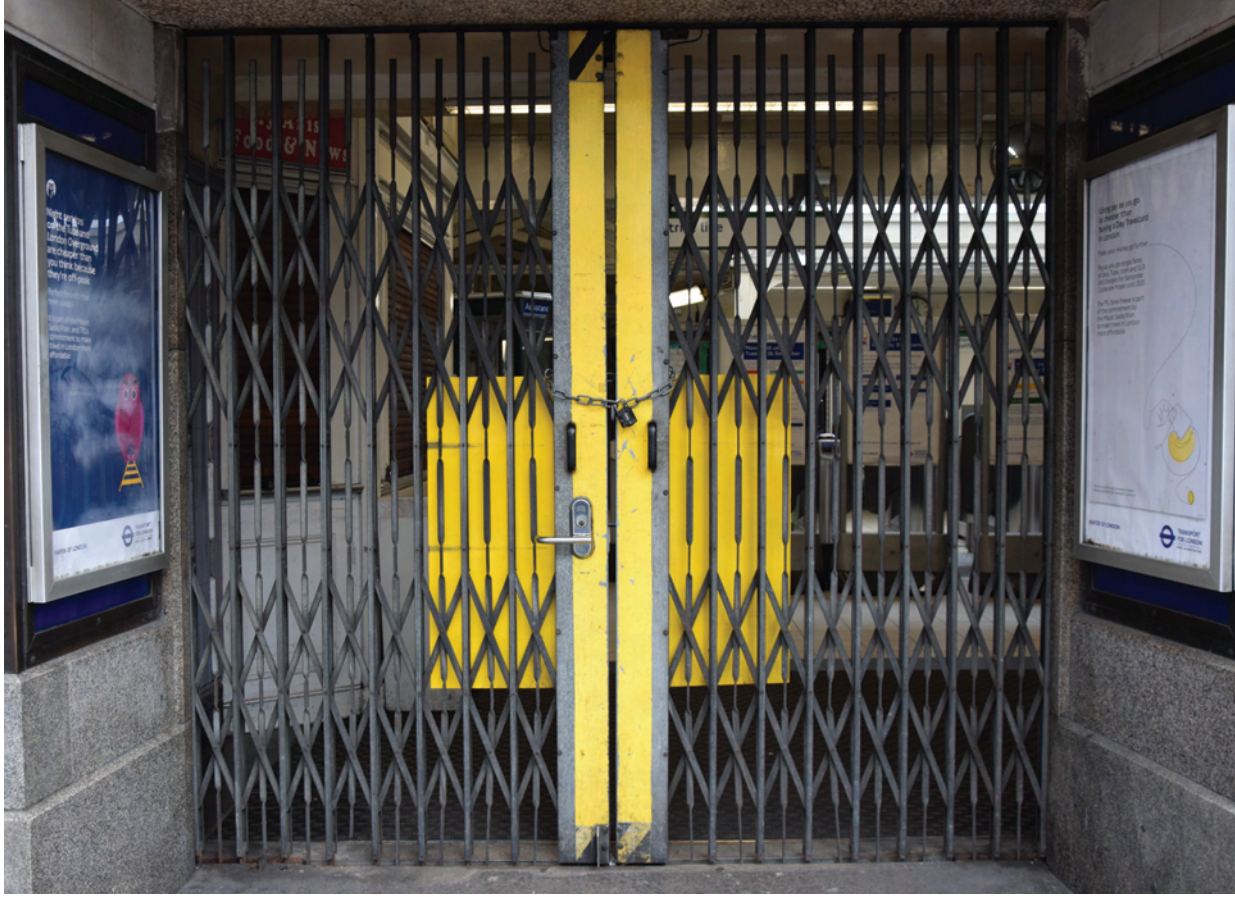


Wood Lane



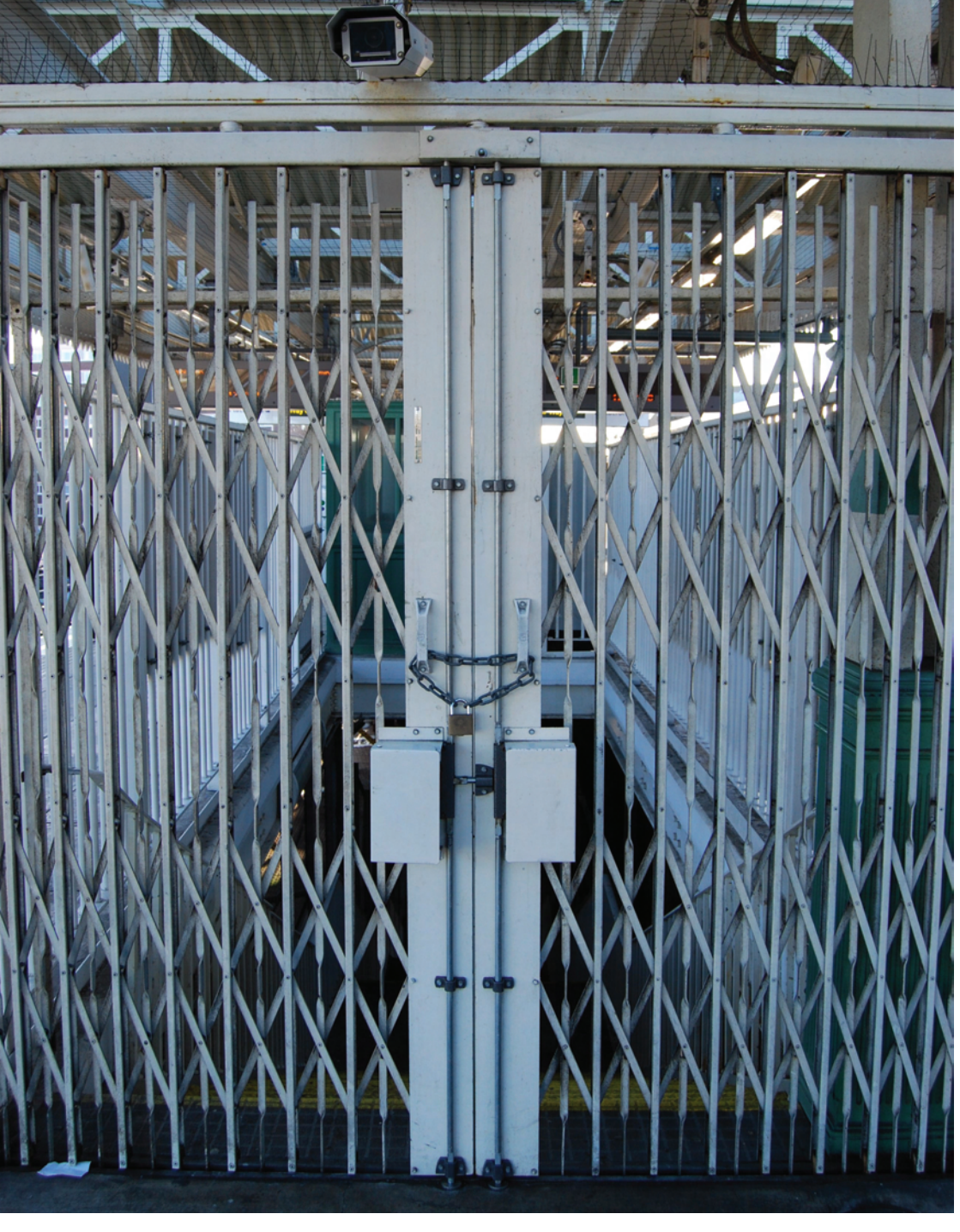
Earl's Court

West Kensington



Hammersmith





Putney Bridge



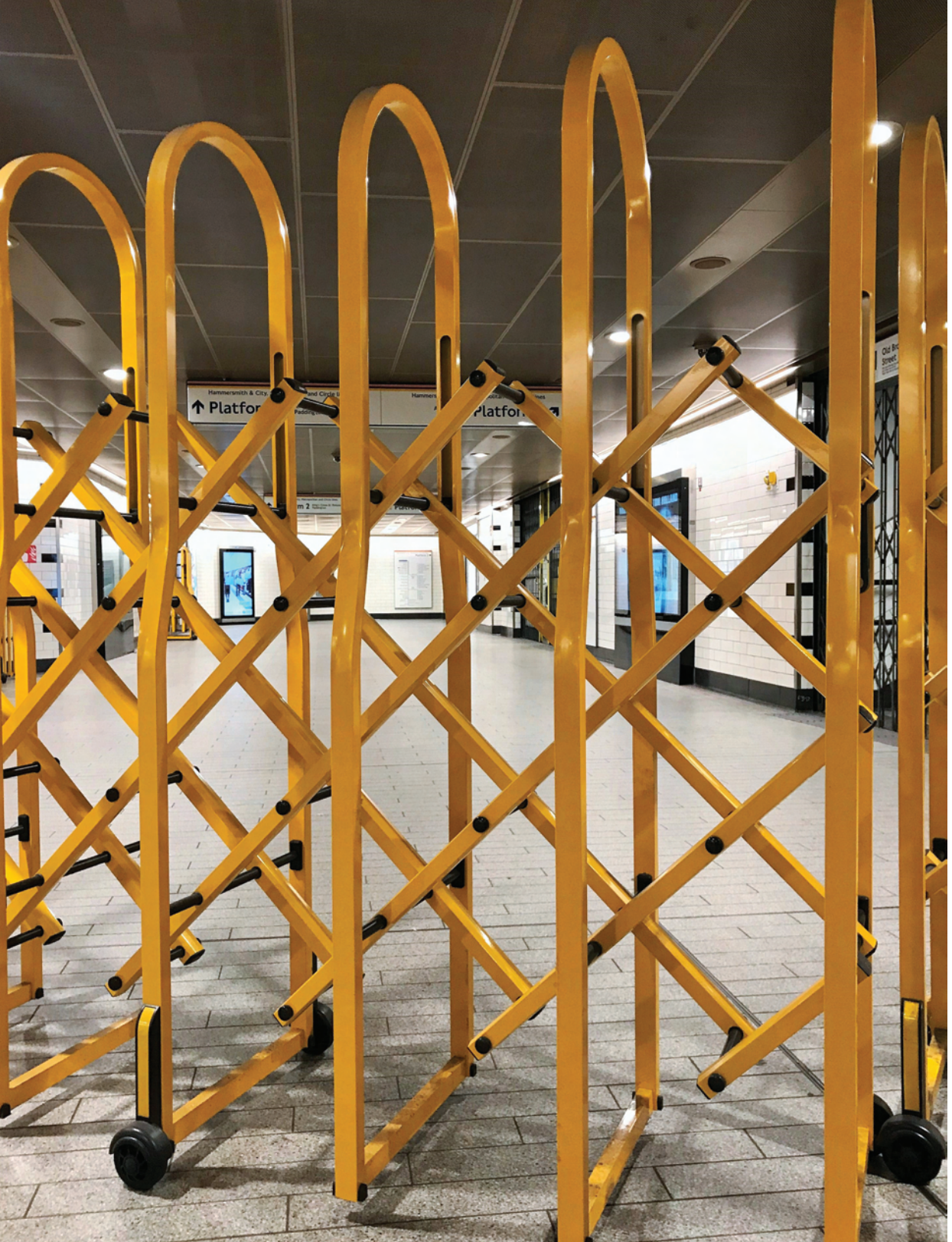
Maida Vale



Notting Hill Gate



Earl's Court



Liverpool Street

Ghost Stations

The London Underground network is constantly expanding. New stations have been opened in almost every decade since 1863. Sometimes, though, the system also shrinks a tiny bit. As it expands and new connections are made, some stations become obsolete, or are simply too close to other stations, or passenger demand proves to have been overestimated. Consequently, dozens of stations were closed down or relocated during the twentieth century. Some of them have long been demolished, while the survivors have become 'ghost stations' – British Museum, City Road, Down Street, King William Street and York Road, to name but a few.

These stations are often like time capsules, exercising a fascination of their own, with old indicators, original tiling, signal boxes and even fragments of Second World War posters. Well-informed trainspotters know that the remains of some ghost stations can be seen when passing through tunnels. Some people enjoy the morbidity of these sites and like to explore what is left of the abandoned structures. A very graphic description of such sensations can be found in Tobias Hill's novel *Underground*, as the main character enters a ghost station:

> 'Casimir breaks into a run, through the last barred sections of light and dark. Then the tunnel walls widen around him and he is at South Kentish Town. The derelict platform is almost chest high beside him. Rows of tiny stalactites are forming from the platform's lip, gleaming grey. Broken equipment is piled against the far wall. Sixty feet away a single light bulb shines in the platform's only side-tunnel, swinging slightly on its flex … The smell of limestone is strong here. Sweet and damp, like church stone. Casimir tries to remember how long ago the station was abandoned; seventy or eighty years, sometime between the wars. Now it feels more like a great natural cave than a place dug and built. He kneels down, looking away across the black platform grime. Deposited in thick ridges, it is too uneven to keep much sign of movement.'

Surprisingly, some of these stations have quite a busy life. For instance, parts of Aldwych are used for training by the police and the fire and rescue service. During the Second World War the station was a public air-raid shelter and also a hideaway for some of the treasures of the

British Museum, among them the famous Elgin Marbles. An attraction for many visitors is a fully functioning 1972 Tube train, which can be used for photo and film shoots.

Perhaps you have already seen one of these ghost stations without knowing it. They have found their way into movies such as *Superman IV*, *American Werewolf* and *Creep*. Occasionally, the stations are opened to the public – an opportunity not to be missed!



City Road station



Old Angel Station



York Road Station



Marlborough Road



Strand Station



Down Street



Brompton Road Station



Old Euston Station

Timeline

Please be prepared for a certain amount of confusion when it comes to the dates of the opening of particular lines, because in some cases 'new' lines actually consisted of renamed, extended or rerouted sections of old lines.

1863	The first Underground route is opened up, running between Paddington and Farringdon stations (later the Metropolitan Line).
1868	Opening of the District Line.
1884	The Circle Line is opened.
1890	The City & South London Line opens, being the first electric railway (later the Northern Line).
1900	Opening of the Central Line.
1906	Opening of the Bakerloo Line.
1906	Opening of the Piccadilly Line.
1933	The newly founded London Passenger Transport Board unites all parts of the city's public transport system.
1940–1945	Londoners shelter in the Tube during the blitz, subsequent air raids and attacks with V-weapons.
1968	Opening of the Victoria Line.
1975	The mysterious Moorgate crash results in the loss of 43 lives.
1979	Opening of the Jubilee Line.
1984	Ban on smoking inside trains.
1985	Ban on smoking on Underground station platforms.
1987	Opening of the Docklands Light Railway (DLR).
1987	A fire at King's Cross St Pancras station kills 31 people.
1999	The Jubilee Line Extension (JLE) opens.
2005	'7/7' bombings result in 52 fatalities.
2008	Introduction of an alcohol ban on the Underground.

Further Reading

A huge number of books about the London Underground are available. Here are some recommendations:

Peter Ackroyd, *London Under* (Vintage, 2012).
London's underground beyond the Tube….

Julian Andrews, *London's War: The Shelter Drawings of Henry Moore* (Lund Humphries, 2002).
Moore's haunting drawings of Londoners sheltering in the Tube during the blitz.

Antony Badsey-Ellis, *Underground Heritage: Tokens of Yesterday on Today's Tube* (Capital Transport, 2012).
This one's all about the looks of the Underground: architecture, style, design and art.

Bob Bayman, *Underground: Official Handbook*, 6th edn (Capital Transport, 2008).
The Underground's own guide to the system.

Gerard Benson, Judith Chernaik and Cicely Berbert (eds), *Poems on the Underground* (Penguin Books, 2015).
Poems old and new, familiar and unfamiliar, explore such diverse topics as love, London, exile, family, dreams, war, music and nature.

Benson Bobrick, *Labyrinths of Iron: Subways in History, Myth, Art, Technology and War* (Quill, 1986).
Classic work on the development of underground transportation in Europe and elsewhere.

J. E. Connor, *London's Disused Underground Stations* (Capital Transport, 2001).
The name says it all – a must for all ghost station enthusiasts!

Tobias Döring (ed.), *London Underground: Poems and Prose about the Tube* (Reclam, 2003; published in Germany).
A wide range of short texts about the Underground from 1862 to 2001.

Andrew Emmerson and Tony Beard, *London's Secret Tubes: London's Wartime Citadels, Subways and Shelters uncovered* (Capital Transport, 2004).
The secret subterranean architecture of our capital.

Oliver Green, *Frank Pick's London: Art, Design and the Modern City* (V&A / London Transport Museum, 2013).
The legacy of the Tube's legendary innovator.

Oliver Green, *The Tube: Station to Station on the London Underground* (Shire, 2012).
A short guide to the system's history, architecture and design.

John Gregg, *The Shelter of the Tubes: Tube Sheltering in Wartime London* (Capital Transport, 2001).
How Londoners sought refuge in the Underground during the Second World War.

Stephen Halliday, *Amazing and Extraordinary London Underground Facts* (David & Charles, 2009).
Lots of interesting little bits of information, stories and numbers.

Tobias Hill, *Underground* (Bloomsbury, 2015).
Gripping 'death on the Underground' thriller.

David Long, *The Little Book of the London Underground* (History Press, 2009).
Another collection of interesting titbits – along with entertaining cartoons.

Keith Lowe, *Tunnel Vision* (Heinemann, 2001).
A desperate man has to 'do the whole system' in a single day.

Andrew Martin, *Underground Overground: A Passenger's History of the Tube* (Profile Books, 2012).
This social history focuses on the human aspects of the system – personalities and passengers.

Marco Pesaresi, *Underground: Travels on the Global Metro* (Aperture Foundation, 1998).
A photographic exploration of the metro and its passengers in ten different cities.

Douglas Rose, *The London Underground: A Diagrammatic History*, 9th edn (Douglas Rose, 2016).
The system's history on a Tube map, with the relevant dates for all stations.

Christopher Ross, *Tunnel Visions: Journeys of an Underground Philosopher* (Fourth Estate, 2001).
Thoughts, observations, tales and some everyday philosophy.

Will Scott, *London Underground Architecture and Design Map* (Blue Crow Media, 2017).
Map featuring a selection of interesting things to look at.

Stephen Smith, *Underground London: Travels beneath the City Streets* (Abacus, 2005).
Another guide to London's subterranean structures.

Sheila Taylor (ed.), *The Moving Metropolis: A History of London's Transport since 1800* (Laurence King, 2001).
Extensive work packed with information and images.

Transport for London, *Step-Free Tube Guide* (Transport for London, 2019).
Shows stations step-free between the street and platform, plus the step and gap between the platform and the train. Also available at http://content.tfl.gov.uk/step-free-tube-guide-accessible.pdf

Barbara Vine, *King Solomon's Carpet* (Penguin, 2009).
Novel about a group of outsiders and the Underground.

Christian Wolmar, *The Subterranean Railway: How the London Underground Was Built and How It Changed the City* (Atlantic, 2005).
One of the most comprehensive histories of the Tube.

… And Watching:

There are also some movies about the Tube. A short selection:

Bulldog Jack (Gaumont British Picture Corporation).
Famous 1935 crime movie, with its very own take on London's Underground.

Creep (Pathé).
Every decent metro system deserves its own horror movie ….

London's Underground: Spark and Steam (Transport Video Publishing).
The old veterans in action!

Quatermass and the Pit (Hammer Film Productions).
The 1967 sci-fi horror classic about an unexpected find during Underground extension works.

The History of the London Underground (History Channel).
Standard documentary about the system's past.

Tube Tales (Amuse Video Inc.).
Nine short films based on the true-life experiences of Underground travellers.

Underground (British Instructional Films).
Silent drama from 1928 about love on the Underground.

Underground Tracks (Video 125).
Driver's eye footage, together with other interesting material.



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