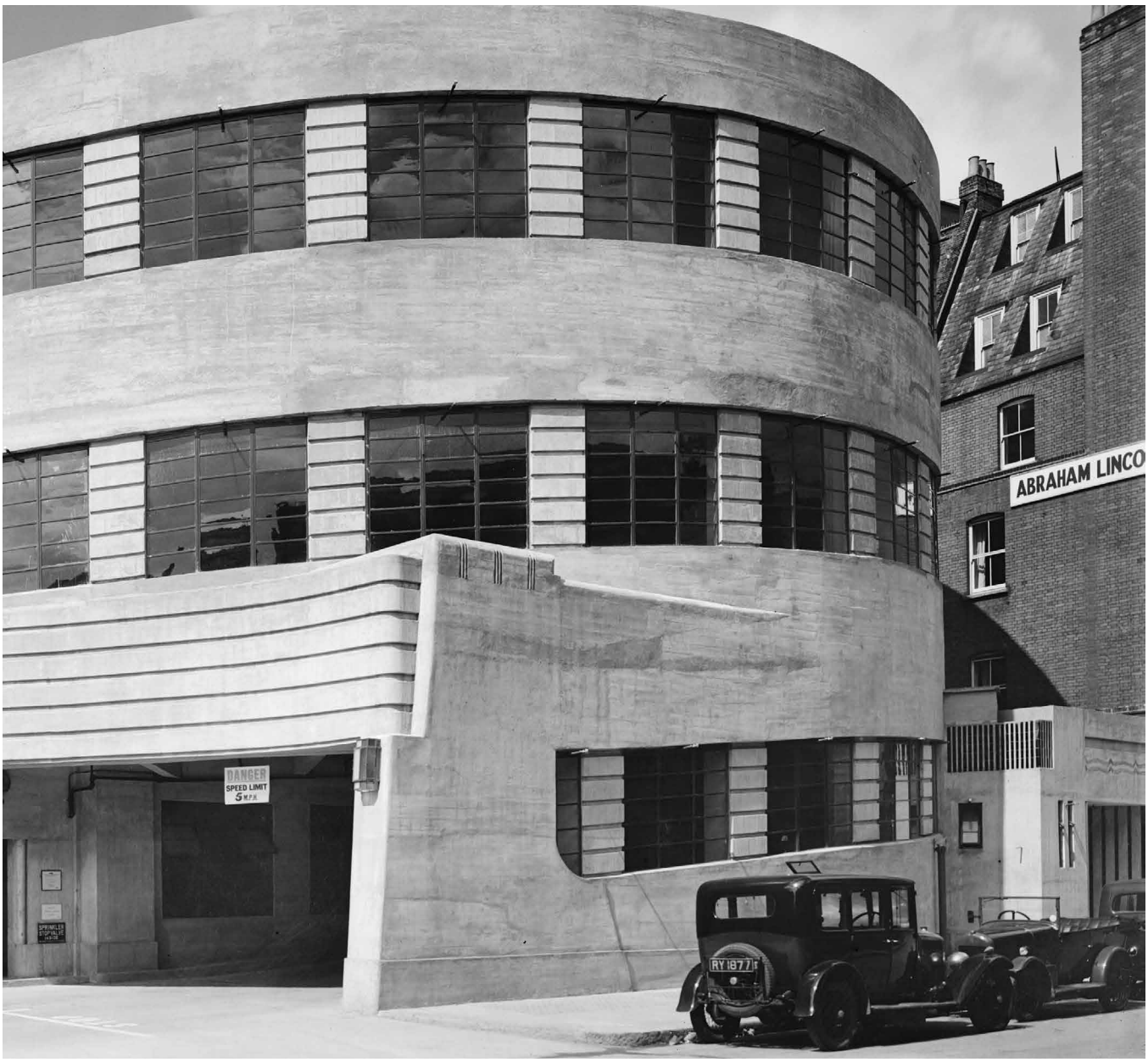
Historic England

Buildings and Infrastructure for the Motor Car

Introductions to Heritage Assets



Summary

Historic England's Introductions to Heritage Assets (IHAs) are accessible, authoritative, illustrated summaries of what we know about specific types of archaeological site, building, landscape or marine asset. Typically they deal with subjects which lack such a summary. This can either be where the literature is dauntingly voluminous, or alternatively where little has been written. Most often it is the latter, and many IHAs bring understanding of site or building types which are neglected or little understood. Many of these are what might be thought of as 'new heritage', that is they date from after the Second World War.

Arriving in the later 1890s, by the end of the First World War motor vehicles had ousted horses as the main means of transporting goods. In the inter-war years many middle class families acquired cars, and by the 1960s car ownership was commonplace. Two-car families were almost the norm by the end of the century. This guide provides a brief introduction to the buildings of what some have called the Motor Age: car factories, petrol stations and car showrooms, domestic garages, car parks, motorway service stations, motels, and the roadhouses and cafes where motorists could find refreshment. Also outlined are the ever-evolving types of road which facilitated this transport revolution.

This guidance note has been written by John Minnis and Kathryn A. Morrison and edited by Paul Stamper.

It is one is of several guidance documents that can be accessed at
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Front cover
The Daimler Garage on Herbrand Street, London (1931-3; Wallis Gilbert & Partners). Listed Grade II.

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Introduction

Car Usage and Ownership

Between 1895 and the present, the world around us has changed immeasurably to accommodate the motor car. The first petrol-powered motor cars were imported into England from the Continent in 1895. A year later, the Locomotives on Highways Act repealed the infamous 'Red Flag Act' of 1865 which had set a country speed limit of 4 mph (6 km/h) and an urban one of 2 mph (3 km/h), and required a man with a red flag to walk in advance of vehicles. The new legislation imposed a speed limit of 12mph, making it a realistic proposition to drive motor cars on British roads. Thenceforth, cars steadily grew in number, although for the first decade they remained largely the preserve of the well-to-do, and were used mainly for touring. By the end of the First World War, cars had largely ousted horse-drawn transport on the roads, and they quickly became a practical necessity for the middle classes who had higher expectations of greater mobility. In the 1960s it became a reasonable aspiration for every family in the country to run a car, and by 1980 many households owned more than one. Mass car ownership has continued to the present day, although some studies suggest that a saturation point was reached in the 1990s.

Cars and the Historic Landscape

From 1896 until around 1906, little change was made to the infrastructure of towns, cities and roads to accommodate motor cars. Experiments were carried out to find a suitable road surface for motor traffic (the eventual solution to the 'dust' problem being tarmac), while existing buildings were adapted to the needs of cars. Consequently, any building erected specifically for the car prior to 1906 is potentially of considerable interest.

The earliest motor-related building type to emerge was the domestic motor house. England's first purpose-built car factories, commercial garages/car parks and car showrooms date from about 1900 but, in each case, few sites established before 1906 have survived. After 1920, petrol stations began to be built along English roads for the convenience of the motorist. In the 1930s roadhouses – more country clubs than pubs (see below, Section 8) - were erected along the new bypasses and arterial roads, and housing/housing estates began to incorporate space for garaging cars. Motels came into being in the 1950s, followed, after the opening of the M1 in 1959, by motorway service stations. Each of these building types, together with road systems, is considered individually below.

In towns, from the later 1960s the car was responsible for policies such as pedestrianisation and traffic calming. From the 1980s, the motor car spearheaded the out-of-town phenomenon, whereby traditional town-centre functions shifted to the periphery. The latest urban planning trend is 'shared space', a remodelling of space to equalise the relationship between pedestrians and motorists. These successive car-driven phenomena have had a huge impact on the historic environment.

1 Car Factories

In the early days of motoring, most cars running on British roads were imported. The British industry began with Harry Lawson's companies, set up to make cars at Motor Mills (mostly demolished), a converted cotton-spinning mill in Coventry, Warwickshire, in 1896. Although Lawson was regarded as a fraud by many of his contemporaries, this enterprise established Coventry as the geographic heart of the industry. Most manufacturers started out at a slower pace than Lawson, in smaller-scale premises, and could not afford to build anew for many years. Around 1900, however, the first new car factories were being erected. Some of these were multi-storey factories of brick and cast iron (for instance, Dennis Bros, Guildford, Surrey, 1901, listed Grade II), a type also favoured by coachbuilders (for instance, Salmons, Newport Pagnell, Buckinghamshire, 1910). The top floor was usually used for finishing, including painting; it was thus particularly well-lit and designed to reduce dust. However, car manufacturers quickly developed a preference for single-storey factories to avoid the need for lifts. These had

Figure 1
The office block (listed Grade II) of an early purpose-built car factory with an unusually ornate façade. This formed the main entrance to the Clement Talbot works of 1903-4 on Barlby Road in west London (architect: William T. Walker). The more utilitarian north-lit sheds of the factory to the rear have been demolished.

Figure 2
Ford's plant at Dagenham in east London (Charles Heathcote, 1929-35) was one of the largest new car factories to be built in England between the wars. Note the wharf projecting into the River Thames.

sawtooth roofs fitted with north-facing glazing. Several early examples survive: those in west London of Napier (Ealing, 1902-7) and Clement Talbot (Kensington and Chelsea, 1903-4, listed Grade II; Fig 1) are fragmentary, whilst those of Vulcan (Crossens, Lancashire, 1908) and Sunbeam (Wolverhampton, 1907, listed Grade II) are more intact. The interiors of body, machine and erecting shops have invariable changed much over time, but the survival of furnaces, travelling cranes, hoists, turntables or rails would add greatly to the significance of these buildings. A particular feature of tall erecting shops (one that is more likely to survive) is a mezzanine level for an upholstery shop: these gave buildings a two-storeyed external appearance. Architecturally, the most elaborate part of the factory was always the office block: those of Clement Talbot (1903-4, see above), Vauxhall (Luton, Bedfordshire, 1907, listed Grade II) and a few others are listed in their own right. Some buildings erected for communities of car workers are also of interest, such as Motor Hotel, a public house in Coventry (1904).

After the First World War, manufacturers found themselves with extra space, in the form of great sheds erected for munitions manufacture. However, firms like Austin and Morris in the West Midlands and Oxford respectively, struggled to adapt their factories with expensive moving assembly lines, like that installed by Ford in its Trafford Park factory (demolished) in Manchester in 1912. Nevertheless, interiors were constantly updated with the latest machinery: for moving cars and components around the factory, for spray painting, and for making steel pressings. Car manufacture became increasingly mechanised, and less crafts-based. This was a time of great change: many firms vanished; new ones came into existence; others merged. The most significant new factory to be established

between the wars, in terms of scale and impact, was Ford's new plant at Dagenham, (1929-35, Barking and Dagenham; Fig 2), on the banks of the Thames in east London. This was followed in the late 1930s by a number of shadow factories, built by car manufacturers with government finance for the production of aero engines in the event of war.

As with the munitions sheds of the First World War, the shadow factories provided much needed space when car manufacture resumed after 1945. Once again, this was a time of merger, and the industry coalesced around the so-called 'Big Six'. Vauxhall, funded by its American parent, was in a position to enlarge its Luton factory with large new shops (referred to as AA and AC) from the late 1940s. In the 1950s, Austin's factory at Longbridge outside Birmingham in the West Midlands (from 1952 the British Motor Corporation [BMC]) also greatly expanded, with the development of the South Works, where one of the most notable new structures was CAB1, a car assembly building designed by Charles Howard Crane with a monitor (clerestory) roof. Most other buildings on the site were by Harry Weedon & Partners, a firm which served the motor industry for many years. Several assembly shops built elsewhere at this time were on two levels, and some relied entirely on artificial lighting: most examples of this type seem to have gone, or been remodelled.

In the 1960s the government forced manufacturers to build new factories outside the traditional areas of car manufacture. These dispersed factories (including Vauxhall at Ellesmere Port, Cheshire, 1960-5, and Ford at Halewood on Merseyside, 1960) benefitted from greenfield sites, and were generally of one storey, but relied to an unfeasible extent on road haulage. Meanwhile, factory interiors were constantly updated with new machinery such as carousel and gate line systems: the carousel being a continuous line for the manufacture of under-body assembly, while gate line involved the use of vertical jigs to assemble the sides of bodies. Several vehicle proving grounds, such as Vauxhall's at Millbrook in Bedfordshire, were created. Though generally hidden from public view, these had a significant impact on local landscapes.

Business turned sour for the British car industry in the late 1960s and 1970s, with a series of unpopular models, paralysing industrial action, job losses and closures. At the end of the decade, the bravest attempt to rectify matters was the new Metro plant (1977, demolished) at Longbridge, which was the first British factory to adopt robotic welding. Much new computerised equipment, some of it Japanese in origin (for instance, cradle-type assembly), was installed elsewhere from the 1980s. Three new factories were built on former airfields by Japanese manufacturers Nissan (1986), Toyota (1992) and Honda (1992), close to Sunderland, Derby and Swindon, respectively. More recently some luxury and niche manufacturers have moved into architecturally interesting purpose-built premises, such as Rolls Royce's factory at Goodwood in East Sussex (Sir Nicholas Grimshaw & Partners, 2001-3) and Aston Martin's at Gaydon, Warwickshire (Weedon Partnership).

It is also worth noting the existence of several purpose-built car museums, many of architectural interest, including Beaulieu (begun 1952; with new buildings added 1959 and 1972), Gaydon and Coventry.

2 Car Showrooms

This is a very ephemeral building type. Few car showrooms retain their original features, whether shopfronts, lifts, turntables or ramps. They are regularly remodelled and updated. Early intact examples are consequently very rare.

Many of the first car showrooms represented expansions of existing businesses, such as horse and carriage repositories (for instance, Coopers, Newcastle, 1897, listed Grade II; Fig 3) or bicycle shops (for instance, Automobile Association, Holland Park, Kensington and Chelsea, 1898). Others were set up by manufacturers or their agents, usually in ordinary retail premises on main shopping streets. Adaptations included new shopfronts with low sills and opening sections, open-sided hoists and, sometimes, gentle ramps.

Figure 3
One of the first purpose-built structures to devote space to the sale of motor cars was Cooper's 'Horse, Carriage, Cycle and Auto Car Repository', built on Westgate Road, Newcastle, in 1897, to a design by local architect T. Dawson. Cars were displayed on the upper floor, shown here. Listed Grade II.

Although not purpose-built, some were fitted out by top-notch interior designers and architects, and may retain significant interiors. One of the first purpose-built showrooms was Mercedes at 132 Long Acre, City of Westminster, London, rebuilt after a fire in 1906. After this, a number of agents and manufacturers built 'headquarters' with showrooms, such as Minerva (North Crescent, Camden, London, 1912-13, listed Grade II) and Daimler (Paradise Street, Birmingham, 1911).

This trend resumed after the First World War, with the construction of many splendid new flagship buildings with showrooms in London's West End (notably for Wolseley, in London's Piccadilly, City of Westminster,1922, listed Grade II*; Fig 4) and in other towns and cities. Again, the main features were plate glass windows and car lifts. A neo-classical style was popular, but perhaps more interesting was a fashion for mock timber-framing, from about 1925 to about 1930, reflecting the association of motoring with the exploration of rural England. Shopfronts became more sophisticated to deal with the problem of reflections: around 1930 several installed curved non-reflective windows (like those at Simpsons [now Waterstones], Piccadilly, City of Westminster), though none of these are known to survive. In the 1930s, showrooms began to relocate to suburban locations, where they adopted a moderne style with white facings, neon lighting, fins and forecourts. Sliding or folding glass doors eroded the distinction between the interior and the forecourt. The

Figure 4
By the 1920s car showrooms in city centres had become quite ornate. One of the most glamorous was the Wolseley showroom on Piccadilly, London (1922, W. Curtis Green), now a restaurant. Listed Grade II*

most well-known and influential examples of moderne showrooms were those designed by Cameron Kirby (for Morris dealer Stewart & Ardern) for sites around London; only his Ilford showroom (Redbridge, 1934-5) survives, much altered. Well-preserved garages, with or without showrooms, in this style, are increasingly rare. Non-reflective glazing was a major preoccupation throughout the 1930s: concrete canopies and verandas were introduced to reduce reflection, adding to the horizontal emphasis, and general appeal, of moderne designs.

After 1945, much less money was spent on car showrooms, which became very utilitarian. The majority were built as simple flat-roofed, steel-framed glass boxes. Those of concrete construction displayed greater variety, sometimes adopting circular or polygonal forms (for instance, Ewell Honda (1961, listed Grade II) in Surrey, again with canopies and inclined frontages (with complex opening mechanisms) designed to reduce reflections and glare. The out-of-town shed-front showroom has been the norm since the late 1970s, but a handful of high-quality designs have stood apart. These include Norman Foster & Partners' festive Renault Distribution Centre at Swindon (1981-2; listed as Grade II* as The Spectrum Building), which was designed with a double-height car showroom, or gallery. Amongst recent manufacturers' house styles, one of the most stylish belongs to Audi. This company erected the ultimate modern car showroom, designed by Wilkinson Eyre for a site by the elevated section of the M4 in Hounslow, London, in 2009. The latest trend, which may spread through the country, is the display tower: examples have been erected in Gateshead and next door to Audi's premises on the M4, for a Mazda and Mercedes dealer, respectively.

3 Domestic Garages or Motor Houses

Domestic garages or motor houses began to appear quite rapidly from about 1900. They were frequently brick-built and could be added to the side of a house. They can be found in many middle-class suburbs; for example, a number survive in Chantry Road, Moseley, Birmingham (Fig 5). In the early days, an inspection pit was commonly fitted. A glass and iron washing shelter in front of the garage was a frequent addition. Prefabricated garages in timber began to be produced from about 1903 by the major manufacturers of prefabricated buildings, such as Boulton & Paul, and were often quite elaborate in design with decorative bargeboards. Asbestos panelled garages appeared from about 1910 but did not become popular until the 1920s. Together with timber garages, these continued to be the most common type until concrete came into widespread use after 1945.

Housing cars at country houses was largely carried out by adapting existing stabling. New country houses or smaller houses in the country had purpose-built blocks, often including workshops and accommodation for chauffeurs. One of the finest examples, carried out in a broadly Arts and Crafts style, is at Ewelme Down House, Oxfordshire (Walter Cave, 1905). The construction of such blocks, which were relatively few in number, mainly took place before 1914 but a few continued to be built into the 1920s, such as that at Thanet Place, Broadstairs, Kent (Edgar Ranger, 1929). Some matched the house in style, others were built to contrasting designs. In the smaller houses, the location of the garages might either be adjacent to the house and integrated into its overall design or located in a separate block.

Figure 5
A motor house of 1904 in Chantry Road, Moseley, Birmingham, is typical of many pre-1914 examples with its half-timbered gable.

4 Maintenance and Repair Garages

These could take a variety of forms. Sometimes a workshop was added at the rear or side of existing shop premises. Where premises were being built anew, a design emerged by the mid-1900s that was to prove ubiquitous until the early 1930s. It comprised a large brick-built shed with a light steel truss roof, arranged so that there were no supports to impede the open floor space: the gable generally faced the road, with a broad entrance in the centre and frequently showrooms and offices to either side. The roof was often hidden behind an ornamental gable and additional lighting was provided by a lunette within the gable. Lock-ups were often provided along the sides. The open interior would be used partly for servicing and repairs and partly for car parking. Examples of these garages, much altered, can still be found in many towns; a particularly original specimen is the former *Shipside* Garage, Collin Street, Nottingham (1927; Fig 6).

Many garages with two-storey frontages were built in the 1920s, often following the styles to be found in office buildings of the period, with commercial neo-Georgian to the fore. As time went on this style was often simplified, as buildings became more utilitarian (Fig 7). Large first-floor windows were increasingly used to enlarge the available display space. Such buildings were usually the work of generalist architects, usually the larger local practices. There appear to have been few specialists in this field until the 1930s when Wallis, Gilbert & Partners and G. Alan Fortescue designed a number of notable garages that were published

Figure 6
The former T. Shipside garage in Nottingham (1927) is an example of the most common 'shed' type of garage.

Figure 7
J. W. Walley, Bishop's Stortford, Hertfordshire (1926, demolished), is typical of many garages and car showrooms of the period in its commercial neo-Georgian style.

Figure 8
A moderne garage par excellence, the former Rootes's garage, Maidstone, Kent, (1938-9, Howard & Souster, listed Grade II), with its strong horizontal emphasis, rounded corners and tower.

in the architectural journals, such as Wallis, Gilberts's work for Henly's at Brentford, Hounslow, London (1937, demolished) and G. Alan Fortescue for Cavendish Motors at Brondesbury, Brent, London (1931, demolished).

The heyday of the garage was probably the 1930s, when a number of moderne garages appeared with features such as rounded corners and windows, metal glazing, long smooth rendered surfaces and, frequently, a clock tower, a fin, or some other vertical device to catch the eye (Fig 8). Such garages often had upper floors accessed by a ramp and, in many cases, parking on the flat roof.

By contrast, many of the rural garages that sprang up in the 1920s were rudimentary corrugated iron or timber shack-like buildings, sometimes with a further shack as a café: the Black Cat Garage and Tearooms, Bampton, Devon, is a rather superior example that has survived. Re-used First World War aircraft hangers and prefabricated agricultural buildings were on occasion employed as workshops, for instance at the Much Marcle Garage, Herefordshire, which is listed Grade II.

After the Second World War, garages tended to be more conservative than those of the 1930s, with none of the stylistic excesses of the more extreme examples. There was little innovation until the end of the 1950s when a number of garages exploited the possibilities of reinforced concrete, using it in particular for some eye-catching canopies. Relatively few were built, the most spectacular being a handful of hyperbolic paraboloid roofs by Sam Scorer for the Lincolnshire Motor Co, notably at Brayford Pool, Lincoln (about 1959, listed Grade II) and at Markham Moor Service Station, Nottinghamshire (about 1962, listed Grade II). Generally the move was towards big box buildings with extensive use of metal cladding.

5 Filling Stations

The first filling stations were opened by the Automobile Association in 1919-21 to sell British-made benzole, a mixture of a coal-tar by-product and petrol. Others, commercially run, followed within a year and by the mid-1920s they were ubiquitous. Early filling stations had little more than a small kiosk adjacent to the petrol pumps and were run by local garages. Pumps, initially mechanical, became increasingly powered by electricity from the early 1930s. Surviving examples of early pumps in their original locations include a 1920s mechanical pump at Wells Garage, Hitchin (Hertfordshire). Unlike in the USA or Europe, English filling stations were not run by the oil companies and none were built to corporate designs before the 1950s. Many filling stations, the appearance of which was entirely dictated by local proprietors with no planning regulation, were, like small village garages, regarded by many as eyesores. Covered in large advertisements and enamelled signs, the perceived threat that they posed to the countryside led to the founding of the CPRE and provoked the ire of earlier kindred bodies, such as the Design and Industries Association. A move to promote designs more in keeping with their surroundings led to filling stations that aped 'ye olde England', with thatched roofs and half-timbering, together with some freaks based on oriental buildings, such as the Chinese Garage, Beckenham, Bromley (1928-9, listed Grade II). Competitions were held to encourage good simple design which favoured of much higher architectural quality than was usual at the time.

Figure 9
East Sheen Filling Station, London Borough of Richmond, (about 1926 for Cory Brothers, listed Grade II) a filling station influenced by American corporate designs, and

Figure 10
Bond's Garage, Barkway, Hertfordshire. A typical village garage of 1938 with its original Beckmeter pumps and owner's house in matching style.

canopies reminiscent of greatly extended lych gates, such as the Coombe Bridge filling station on the Kingston bypass, Surrey (demolished). Surviving examples of this more subtle approach to filling station design (eg Figs 9 and 10) include the Clovelly Cross Filling Station, Devon (1930, listed Grade II) and the Electric Filling Station, Newbury, Berkshire (1934, listed Grade II). Filling stations were free to sell a variety of brands of petrol and thus had a number of differently coloured pumps. Some local authorities, using their powers under the Petroleum (Consolidation) Act 1928, insisted on signage and colour schemes being to approved standards.

After 1945, the solus agreements introduced by the major oil companies tied filling station operators to selling only one make of petrol; in return they got financial support to remodel their premises. Branding became much stronger, and in the mid-1950s standardised designs of filling station began to appear. In addition, some oil companies began to operate their own filling stations. Filling stations began to be transformed into service stations by the addition of a lubrication bay, and modular designs of contemporary appearance emerged. Some chains, such as Blue Star Garages, favoured concrete canopies but, in general, canopies remained rare until the 1960s. They became much more common with the introduction of the Shell and BP 'New Look' stations in 1959 and lightweight 'gull wing' designs by Conder in the 1960s, but these were all small in scale, covering little more than the pumps.

The major change occurred with the move to self-service in the late 1960s. This brought about the demise of the small kiosk by the pumps and introduced large flat canopies to cover almost the whole forecourt. Ultimately, this led to the removal of the sales building from the rear to one end of the site. Filling stations tend to be subject to frequent rebuilding, generally every 10-20 years, a process accelerated by the switch to self-service and the expansion of retail provision.

6 Car Parks

6.1 1895-1914

The French word 'garage' was initially applied specifically to buildings for the storage of large numbers of cars, and was first adopted in England in 1900. Before 1914, car parks were built mainly in central London and in well-to-do resorts, the chief destinations of the metropolitan motorist. The earliest surviving example yet identified was erected on Wardour Street, City of Westminster, London, in 1902-3, by the London Motor Garage Co. Two hundred cars could be accommodated on three floors, transported by car lift. One of the most remarkable pre-1914 survivals is the reinforced concrete Electromobile Garage (Fig 11; now NCP) on Carrington Street, City of Westminster, London (1907) a two-storey structure in which 300 electric vehicles could be stored and charged. Whilst London garages tended to be utilitarian in style, those in resort towns such as Eastbourne and Bournemouth had more elaborate façades, sometimes faced in faience. Lifts, often with turntables to assist manoeuvring, remained the normal system of moving cars onto upper floors until about 1930, but no early mechanisms are known to survive. However, ramps had been used widely in nineteenth-century stable depots, and at least one purpose-built pre-1914 garage (demolished) – in Belgravia, London – is known to have had a straight ramp rather than a lift; others might exist. One other important category of pre-1914 car park was the hotel garage. These tended to be restricted to a single level. One listed Grade II example with a fine façade and lettering is the Green Dragon Hotel in Hertford (1903); a more intact but plainer example is the Pulteney Hotel Garage in Bath (1907; Fig 12). Meanwhile, in London suburbs and provincial towns, a form of single-storey 'shed' garage met local parking needs: one typical example is listed, Lee's Garage in Rothbury, Northumberland (1913, Grade II).

Figure 11
The earliest surviving multi-storey car park in Britain appears to be 33-7 Wardour Street, London, which was erected for the London Motor Garage Co., and opened in 1903. It still stands today, used as a pub.

Regardless of their location or form, pre-1914 garages incorporated mesh lock-up parking cages. None of these is known to survive.

Figure 12
A small number of parking garages built for hotels prior to the First World War are still in use as garages: this, of 1907, served the Pulteney Hotel in Bath.

6.2 1918-1939

Between the wars, multi-storey car parks (MSCPs) were built throughout London, at seaside towns, at places of entertainment such as cinemas and theatres, and at transport termini. As yet, they were enclosed buildings, with glazed windows and central heating; lounges and cafes were provided for chauffeurs and owners; parking was seldom allowed on exposed roofs, which often carried mechanisms for ventilation systems and lifts. Ramps came into their own, with a series of experimental systems, in the 1920s. Two garages were built with long, straight ramps in 1923: the Bluebird Garage in Kensington and Chelsea (listed Grade II) and the Mount Pleasant Garage in Clerkenwell, Islington (demolished). Several other garages, such as Macy's Garage, Balderton Street, City of Westminster (1925-6, listed Grade II), were built with combinations of lifts and long ramps. The first car park to adopt the d'Humy or staggered-floor system, with half-levels connected by short ramps, was the Poland Street Garage, City of Westminster, of 1922-5; this was, ultimately, hugely influential (the earliest provincial examples being the Dex Garage in Newcastle, 1930-1, and Motor Macs in Bournemouth, 1932, both extant). Other systems were tried: long straight ramps connected every floor of the Lex Garage on Brewer Street, City of Westminster (J.J. Joass with Robert Sharp;1928-9, listed Grade II); internal curved ramps were used in the Piccadilly Circus Garage, City of Westminster (1928-9, demolished), and external curved ramps at Daimler Hire Garage, Herbrand Street, Camden (Wallis, Gilbert & Partners; 1930-3, listed Grade II; Fig 13). By now, the aesthetic treatment of car parks was being taken seriously: Macy's, Lex and Daimler represent very different attempts to give suitable architectural expression to this relatively new building type. All designs were affected by the need for part of the frontage to be recessed to accommodate petrol pumps.

In the 1930s, more staggered-floor garages were built in London, most impressively the Cumberland Garage at Marble Arch, City of Westminster (1933-4) and Joseph Emberton's

Olympia Garage, Kensington and Chelsea (1936-7). The combined car park and bus station erected on Talbot Road, Blackpool (1936-7), was the first multi-storey municipal garage, and the first to be integrated with the public transport infrastructure. A number of London buildings, such as hotels and apartment blocks, were built with car parks in their basements: for instance, the Adelphi (1936-8, listed Grade II), and Rossmore Court (1936, unlisted), both in the City of Westminster. The first true underground car parks (that is, erected under an open space rather than in a basement) were built under the promenades of Hastings, East Sussex (1930-1 onwards) and Blackpool, Lancashire (1932-4), but the first to require excavation were dug as air-raid shelters in the late 1930s (for instance, Kingston-upon-Thames, Surrey), with the intention of completing them as car parks after the war. By the late 1920s it was feasible to park cars outside for longer periods, and some large surface car parks were created for the first time. The first retailer to provide such a facility was Debenhams in London in 1925 (demolished). The River Street Car Park in Windsor, Berkshire (1927-8, unlisted) remains intact, together with its supervisor's kiosk and cloakroom block, although the herringbone parking arrangement (typical of the late 1920s) has been altered. Doubtless, others survive elsewhere, together with their ancillary buildings.

Figure 13
The Daimler Garage on Herbrand Street, London, is one of the best-known modernist buildings in central London (1931-3; Wallis Gilbert & Partners). It was one of the first garages to be listed, at Grade II.

6.3 1945-Present

The blitz provided many cities with open spaces that were adopted as car parks; indeed, some may still be used in this way today. The first London MSCP to be completed after the war was the Lex-Selfridge Car Park, City of Westminster (1958-60), whose modern curtain wall and mosaic tiles belied an old-fashioned interior with glazing, long straight ramps and turntables. This was followed by compromise solutions at Audley Square, City of Westminster (1961) and Great Eastern Street, Hackney (1962-3). Within a few years, however, the American-style open-deck MSCP with exposed rooftop parking became the norm, and MSCPs were being erected for the first time in many provincial towns. The earliest seems to have been Lower Precinct, Coventry (1959) demolished around 2000. Early surviving examples include Allhallows, Bedford (1961). This was of *in situ* concrete (ie: concrete poured on the site) with mushroom columns, but many were built using precast systems (such as 'Bison') or the American lift slab technique (used first for a car park at Longbridge, West Midlands, demolished). The lift slab technique was adapted to create the country's first warped-slab car park at Lichfield (Staffordshire) in 1970; this type is still being erected in significant numbers today. Different ramp systems were used: long straight ramps connecting full height floors (for instance, Heathrow, 1963), staggered floors (ubiquitous), and continuous parking ramps (for instance, Rupert Street, Bristol, 1961). Quite often the MSCP was unified with another function, such as a hotel (for instance, Roundhouse Hotel, Bournemouth, 1967-9; Unicorn Hotel, Bristol, 1963-6). The most boldly sculptural post-war car parks were Owen Luder's car parks built in the mid-1960s at the Tricorn Centre, Portsmouth, and Trinity Square, Gateshead, both demolished, and the Preston Bus Station (listed Grade II) and Car Park in Lancashire (BDP, 1969; Fig 14). Some other MSCPs are distinguished by artworks (mosaic panels or

Figure 14
The bus station and car park at Preston, Lancashire (1969; Keith Ingham of BDP), a large-scale integrated complex. Listed Grade II in 2013.

cast-concrete sculptural decoration) or elaborate concrete screening. An example is Abbey Walk, Grimsby, Lincolnshire (late 1960s).

England's first mechanical car parks – where machinery was used to park cars at the press of a button, sometimes with the intervention of human lift operators for part of the process– were built in the 1960s, but in recent years all of these have been demolished with one exception: Greek Street, Leeds (1970, unlisted; Fig 15). This type of MSCP fell out of favour between 1970 and 2000, but many small private mechanical car parks have been installed over the last decade, often serving residential complexes on tight urban sites. Underground car parks were another popular, if expensive, option in the 1960s, especially in London, where they followed many different systems. Outside London, one of the most ingenious is the spiral car park in Ipswich, Suffolk (1967). Fewer underground car parks were built between 1970 and 2000 but, like mechanical car parks, are experiencing a revival. Another alternative was rooftop parking, first used extensively in Coventry, notably on the roof of the Retail Market, listed Grade II, with connecting bridges to other roof parks. Outside towns, car parks were first built at transport termini (airports; parkway stations), then as park-and-ride facilities (starting with Leeds in the 1960s and Oxford and Nottingham in the early 1970s). From the 1980s, car parks have been built at out-of-town shopping and leisure centres, with some notable recent examples at new hospitals.

Figure 15
A number of mechanical car parks were built in the 1960s. Only one of these still stands, on Greek Street in Leeds (1968-70; Maurice Sanders Associates).

7 Cafes and Roadhouses

Initially, the relatively wealthy motorists would use the services of hotels and former coaching inns when they wished to stop and eat. The latter saw a revival in their fortunes but it was not until the great expansion of popular motoring in the mid-1920s that purpose-built structures began to appear. These tended to be shanty-like, often run in conjunction with a filling station or garage, and similar in appearance to many tea-shops.

The major development was the emergence of the roadhouse about 1928. Roadhouses (eg Fig 16) need to be distinguished from 'improved' public houses, which also multiplied at this time. They served a motorised clientele, rather than a local market, were located on the edge or within reasonable distance of major population centres and offered a range of facilities, which usually included drinking, dining, dancing, live entertainment and swimming. They were, in effect, inland resorts. Architecturally, they generally fell into two types, the moderne and the neo-Tudor, sometimes the genuine article in the shape of a converted barn removed from another site. Perhaps the best-known, the Ace of Spades (E. B. Musman, 1928, 1933) on the Kingston bypass in Surrey, combined a neo-Tudor exterior and bar with an ultra-modern clubroom. The Comet, Hatfield, Hertfordshire (1933, listed Grade II), again by Musman, is an outstanding example of a roadhouse in moderne style, while the Showboat, Maidenhead, Berkshire (1933), now converted into a factory, resembled an ocean liner in its treatment of the swimming pool area.

Figure 16
The Hinckley Knight, Leicestershire, a moderne roadhouse of the early 1930s, shows the extent to which many motor-related buildings have been altered over the years.

Roadhouses were never built in large numbers, were mostly located on arterial roads, predominantly in the south of England, and went out of fashion after the Second World War. Their sites have proved attractive for redevelopment for hotels or, alternatively, have disappeared under road improvements. Those that survive have generally been extensively altered, especially the interiors.

8 Motels

With one exception – the Hotel Cottages, Boroughbridge North Yorkshire (1934, demolished) – the English motel is a creation of the post-war years. Motels began to appear in the early 1950s and multiplied at the beginning of the 1960s. The earliest motels comprised separate or linked chalets, each with its own front door, with guests' cars parked nearby in individual garages or car ports. The best known example is the Newingreen Motel, Kent, of 1953 (demolished). Motels were usually contemporary in style and were linked to a central restaurant building, either new-built or an existing pub or hotel. By the mid-1960s, the emphasis changed to motor hotels where rooms were approached by internal corridors and where parking was no longer under cover adjoining the unit but in an open car park. Some traditional motels with individual units continued to be built into the early 1970s, but the move to chains of budget hotels of the type generally found today has proved inexorable.

9 Motorway Service Stations

The first of England's motorways, the Preston Bypass in Lancashire, opened in 1958 as the initial section of the M6. A year later, in 1959, the first section of the M1 was opened. While these motorways took many years to achieve their present length, many others were built in the course of the 1960s and 1970s.

From the outset, facilities were provided for users of the new motorways, both to refuel cars and to provide rest and refreshments for their occupants. The form these facilities took as they developed has been analysed as falling into five categories: the 'railway station', the 'restaurant on bridge', the 'pavilion', the 'barn' and the 'shed'. The 'railway station' is where facilities are provided on either side of the motorway, linked by a footbridge. This is the earliest form of motorway service station, as employed at Watford Gap Northamptonshire (1959), and became the standard arrangement, examples continuing to be built throughout the 1960s, culminating in the landmark tower at Forton, Lancashire (1965, listed Grade II), an attempt to echo in built form the excitement of a new motor age. The next type to evolve, the 'restaurant on bridge', as found at Leicester Forest East (1964), is a highly characteristic form where a striking building, with many of its facilities located directly above the traffic lanes on a bridge, exploits its position adjacent to the motorway to act as a beacon to attract the passing motorist, with all the examples built between 1961 and 1964. In the 1970s and 80s, the 'pavilion' prevailed, where the buildings moved further away from the motorway, became less obtrusive, and looked out towards the surrounding country. Some innovative designs emerged, such as those at Woolley Edge in West Yorkshire (1972) and Burtonwood in Lancashire (1974). The 'barn' followed the fashion for neo-vernacular brick structures with tiled roofs that arose in the 1980s for a number of building types, such as out-of-town supermarkets. Examples, such as that at Clacket Lane in Surrey (1993), were built from the mid-1980s to the mid-1990s. From then until the present, the dominant type has been the 'shed', usually metal-clad, extensively glazed, and with exposed steel stanchions. Like modern shopping centres, these provide flexible interiors accommodating a food court within a large open space.

10 The Road System

Although the construction of new roads, such as Corporation Street in Birmingham, was undertaken in cities throughout the nineteenth century as part of municipal improvements, new roads outside urban areas had rarely been created since the turnpikes in the earlier part of the century. Around 1900, roads were quite unsuited to motor traffic.

Schemes for new roads and road structures to deal with the congestion caused, primarily, by cars were developed before 1914, but the requisite administration and finance was put in place only in 1919, with the creation of the Ministry of Transport. Thus large numbers of new bypasses, ring roads and arterial routes, with ambitious bridges, tunnels and even viaducts, were created in the 1920s. In particular, the new arterial roads of the 1920s and 30s made extensive use of reinforced concrete for bridges, such as that carrying the A1 over the

Figure 17
From the 1920s the engineer-architect Sir Owen Williams created many daring concrete structures. These included, in collaboration with the architect Maxwell Ayrton, this bridge (1925-9) which carried the A1 over the River Nene on the Wansford Bypass. Today it carries only the northbound carriageway. Listed Grade II*.

River Nene at Wansford in Cambridgeshire (1925-9, Grade II*; Fig 17). Another remarkable structure was Silvertown Way (Rendel, Palmer & Tritton, 1930-4; Fig 18), a viaduct or flyover with slip roads erected to serve the Royal London Docks. New arterial roads attracted 'ribbon development', prompting revised approaches such as the 'parkway' (notably at Wythenshaw in Cheshire [now Greater Manchester], about 1930, and at Letchworth in Hertfordshire, about 1930). Existing roads were 'dualled' and new dual carriageways built in the 1930s; one of the first was Western Avenue (A4). One of the first of these to have a 'flyover junction' was a junction on the Winchester Bypass, completed in 1940 (demolished). Meanwhile, urban streets were transformed by vast amounts of new signage and street furniture (for this see English Heritage's Street Furniture Selection Guide), designed to control traffic and pedestrians.

New road building resumed in the mid-1950s, with motorways and ring roads that were more heavily engineered than any of their pre-war counterparts. Many ambitious plans formed in the era of comprehensive development were scaled down or abandoned from the 1970s, as road protests and soaring land costs took effect. New roads, however, continue to be built in the countryside until the government's motorway programme ran out of steam – largely as a result of the furore caused by the construction of the M3 at Twyford Down, Winchester – towards the end of the last millenium.

Figure 18
Silvertown Way – a curved reinforced concrete viaduct designed by the civil engineers Rendel, Palmer & Tritton – was built 1930-4 and led to the Royal London Docks. It was a precursor of many urban flyovers built after the Second World War.

11 Further Reading

For a general overview of the building types discussed here, and for general historical background, see:

Kathryn A. Morrison and John Minnis, *Carscapes: the Motor Car, Architecture and Landscape in England* (2012)

David Jeremiah, 'Buildings for the Motor Car', pages 161-88 in J. Holder and S. Parissien (eds), *The Architecture of British Transport in the Twentieth Century* (2004)

Peter Thorold, *The Motoring Age: The Automobile and Britain 1896-1939* (2003)

For the early days of motoring, the official histories of the RAC and the AA are useful:

Piers Brendon, *The Motoring Century, the Story of the Royal Automobile Club* (1997)

Hugh Barty-King, *The AA, a History of the Automobile Association 1905-1980* (1980)

For car factories see:

Paul Collins and Michael Stratton, *British Car Factories from 1896* (1993)

For early motor houses see:

John Minnis, 'Practical yet Artistic; The Motor House 1895-1914', pages 73-88 in Geoff Brandwood (ed), *Living, Leisure and Law: Eight Building Types in England 1800-1914* (2012)

For small, rural garages see :

Llyn E. Morris, *The Country Garage* (1995)

For motorway service stations see:

David Lawrence, *Always a Welcome: The Glove Compartment History of the Motorway Service Area* (1999)

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