

# ENGINEERING DRAWINGS

# RAILWAY MUSEUM

The archive collections of the National Railway Museum include around one million engineering drawings produced mainly for the manufacture of railway locomotives and rolling stock, along with some civil engineering and architectural drawings.

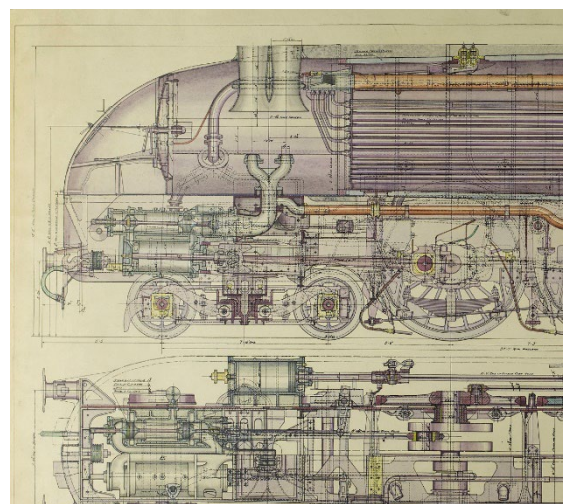
This research guide aims to help you find your way around the collections and find the engineering drawings you are looking for. As most of the drawings we hold are for railway vehicles, we will concentrate mainly on how to find drawings for railway vehicles - locomotives, carriages and wagons. However, the advice here can be applied generally to help find any type of drawing and the table at the end of this guide includes details of collections that contain civil engineering and architectural drawings.



*Draughtswomen in Doncaster railway works, 1944*

## WHERE TO START YOUR SEARCH

Our engineering drawings collections are usually arranged by which drawing office produced them. So to identify the right catalogues to search, the first piece of information you will require is which works and/or company manufactured the vehicle. That should help guide you to which collection may contain drawings for it. For example, a Great Western Railway (GWR) locomotive built at Swindon should have drawings in the Swindon Locomotive Works drawings collection. If you don't know which company or works built the vehicle, you can often find out using an online research. If you cannot find the answer online, our library collection will likely hold the answer.



*Derby Works general arrangement drawing for 'Coronation' class, 1936*

If you only know the company that built the vehicle, you might need to look in more than one collection. Sometimes companies would split their production between multiple works, either so that those works could specialise in producing certain types of vehicle or because they had inherited multiple works from mergers with other railways. For example, the Lancashire and Yorkshire Railway designed and built its engines exclusively at Horwich works but its carriages and wagons were designed and built at Newton Heath. After the grouping of railways in 1923 most companies had numerous major works. The Southern Railway for example inherited works at Ashford, Brighton and Eastleigh. Sometimes the design work was shared between drawing offices at more than one works. The LMS 'Coronation' Class pacific locomotives, were all built by Crewe Works but most of the drawings for the class were produced by the Derby drawing office, although Crewe did also produce some drawings.

Railway companies did not always build their rollingstock themselves. Instead, they sometimes bought from private manufacturers. Our collections include archives from several private manufacturers. If you are looking for drawings of rolling stock built by a private manufacturer for a UK railway company, you should look in the drawing collection for both the manufacturer and the railway company because manufacturers sold copies of their drawings to the railway company alongside the vehicles. The private manufacturers collections also include drawings of rolling stock that was exported overseas, as well as drawings of locomotives and wagons sold to private industries in the UK that had their own internal railway systems.

Sometimes agents would act as intermediaries between the railway companies and the manufacturers, especially where those railways were outside the UK. The agents would usually retain a copy of the drawings. This was the case for the Crown Agents and Kennedy Henderson whose archives are now in our collection.

## **WHERE TO FIND OUR DRAWING CATALOGUES**

The cataloguing of our drawing collections is an ongoing project that has already taken more than two decades. Over time we have improved the methods and quality of our cataloguing, so there is some variation between our drawing catalogues.

Our drawing collections catalogues broadly fit into three categories:

- Collections that are catalogued on our main archives catalogue. You can search all of these catalogues at the same time.
- Collections that are individually catalogued. You can find searchable PDF copies of each of these catalogues available to download from the "[drawing lists](#)" section of our catalogues webpage.

- Collections awaiting cataloguing. We have not finished a catalogue of these yet but we may still be able to help you find drawings from these collections, so please contact us to find out more.

Take a look at the table at the end of this guide to find out about the collections we hold and where to find their catalogues.

If you cannot find a collection that covers what you are looking for, take a look at the final table in this guide for details of large drawing archives held elsewhere in the UK.

## **SEARCHING THE CATALOGUES**

Whilst browsing the catalogues can be effective, it is time consuming, so we recommend that you use the search functions to aid your search. The method of searching depends upon the type of catalogue.

### **Searching PDF catalogues**

- Firstly, open the PDF catalogue by clicking the link in the “drawings lists” section of our catalogue webpage. You can view the PDF in your browser or save it onto your device to open with a PDF reader.
- Next, open the find search. How you do this will depend upon your device or software. Look for a magnifying glass symbol, check the menu for something called “find”, “find in page”, or similar, or if you are using a keyboard press “ctrl” and the letter “f” at the same time. If you are using a pdf reader like adobe, you can press ctrl+shift+f all at the same time to open a more advanced search.
- Next, enter your search terms. Some searches will start automatically as you type and in other versions you may need to click return to start the search.
- The search will look for every instance where the exact string of characters (letters, numbers, symbols) appears in the document. The view will jump to the first/next instance of the search in the text, where the search term will be highlighted. Then press enter again or use arrows to navigate to the next instance. Some searches will highlight parts of the right-hand scroll bar to show you where the results are in the document.
- The search will only look for text that exactly matches what you have written. If you search for “A4 class”, you will not find any instances where the text says “class A4”, or simply “A4”.
- Once you have identified the drawings that you are interested in, remember to make a record of the drawing number, any box or roll numbers, the description and the catalogue in which you were making your search. You will need to supply this information when booking a visit to view the drawing or when you send a request to order copies.

## Searching our archive catalogue

Follow the link from our catalogues webpage to our [archive catalogue](#) which will open on the simple search page. The simple search will search all our collections across all of the Science Museum Group archives.

You can use the advanced search to refine your search, for example by searching within a specific date range. You can also restrict your search to a specific collection by putting part of that collection's archive reference into the "reference" field.

The screenshot shows the Science Museum Group archive catalogue search results page. At the top is the Science Museum Group logo. Below it is a navigation bar with tabs: Introduction, Search, Results, Details (selected), and Search History. On the left, there are 'Actions' buttons: Download and Print. The main content area displays the details for a specific item: 'Drawing of 4-4-0 Passenger Engine General Arrangement Blueprint'. The details include: Reference (NBL/3/2/4701), Production date (19-11-1885 - 19-11-1885), Creator (Dubs & Co.), Scope and Content (Order No. E2245, Drawing No.4701), Extent (1 item), Level of description (item), and Repository name (National Railway Museum, York). Below the details is a 'Hierarchy browser' showing the collection structure: TOP (NBL Records of North British Locomotive Company Ltd & Constituent Companies, contains 4 parts), SUB-FONDS (NBL/3 Dubs & Co Ltd, contains 2 parts), SERIES (NBL/3/2 Engineering Drawings, contains 586 parts), and ITEM (NBL/3/2/4701 Drawing of 4-4-0 Passenger Engine General Arrangement Blueprint). At the bottom, there are logos for Science Museum, Science+Media Museum, Science+Industry Museum, and Railway Museum.

Click on any of the results of your search to view more information about them. You will also see the hierarchy browser for the collection the item has come from. Click on the + icon to browse other items from that collection.

## General search tips

- Keep initial searches broad to gauge how much relevant information is available and then refine your search by adding or changing search terms.
- Railway companies did not use enthusiasts' nicknames for rolling stock on their drawings so these terms will not appear in the catalogues. Avoid searching for names like "black five" or "jinty". However, official company names may be used like "King class".
- Drawings were not produced for individual locomotives unless that locomotive (or part of it) was unique. Avoid searching for locomotive names or numbers, instead search for a locomotive's class name, class number or lot number.
- Drawings broadly fit into three categories:

- Diagrams show a whole object. They are usually quite small and only have an external view with limited detail. They may provide key dimensions (e.g. a locomotive's length, width and distance between wheels) and additional information like weights.
- Arrangement drawings are usually highly detailed, including cross sections and multiple views of the object. A general arrangement will show the whole of the subject, other arrangement drawings may show a large group of components that make up a major part or system of the object. E.g. a pipe arrangement will show all of an engine's pipes for carrying steam, water, vacuum etc. whilst a boiler arrangement will show all of the components that make up the boiler.
- A detail drawing will show the individual construction of usually multiple small components that are part of a larger system or part of an object. For example a "brake details" drawing might show all of the individual components that make up a wagon's hand brake.
- Note that not every drawing description/title will indicate what type of drawing it is.
- It was common for drawings to be updated as components were modified. Look for duplicates of the drawing you require and consider which version you might need.
- If you are not sure where to start your search, try the Oxford Publishing Company microfilm collection. It includes drawings from every railway company with most of the drawings being general arrangements or diagrams.

## USING DRAWING REGISTERS TO AID YOUR SEARCH

Drawing offices did not just produce drawings, an important part of their work was to keep a record of the drawings they had made. These records included registers of drawings in numerical order, as well as lists of drawings for specific classes of locomotives. These also may be referred to as 'schedules' or 'lot lists'. These lists can be very useful if you are looking for specific drawings for a particular class of locomotive. The museum holds a large selection of these records from numerous works, and they can be consulted as archival material in Search Engine. A list of the registers can be found in the "[drawing lists](#)" part of the catalogues webpage.

Sometimes these lists were produced and stored alongside the drawings themselves. This was common when locomotives were produced by private manufacturers who sold the engines to the railway companies alongside a "contractor's roll" of drawings for the engines. These would often have an index of their contents at the front. Some railway works also produced these lists for their own rolling stock, especially the LNER carriage works. You can find these indexes listed in the catalogues of the drawing collections.

It was also common for draughtsmen to include a list of related drawings on the drawings themselves. For example, a motion arrangement drawing could include a list of drawings for the main components like the connecting and coupling rods etc. So once you have found one drawing it can be a lot easier to find the others.

These sources can all help you to identify the drawings you are looking for. However, they are historical artifacts that record a snapshot in time. Drawing offices frequently disposed of drawings when they were no longer needed, or they were lost or destroyed during their use. Just because a drawing is listed on a register or schedule does not mean it has survived into our collection, so use the information like drawing numbers that you find in the registers and indexes to aid your search of our collection catalogues.

## LIST OF DRAWING COLLECTIONS AND THEIR CATALOGUES

The following table details the list of drawing collections in our archives. The list is not exhaustive. There are further small collections and individual drawings which can be found by using the [collection search](#).

The table below gives the name of each collection and a brief description of that collection's contents. The catalogue availability column details where the catalogue can be found. Collections listed as "PDF drawing list" can be found on our [drawing lists webpage](#). Collections listed as "archive catalogue" can be searched via our online [archive catalogue](#). If it is followed by "item level" then each item in that collection has been individually listed. If followed by "box level" then there will be a general description of the contents of each box or roll. If we do not have a catalogue available online then there will be details about how to access the collection.

The "collections online reference" provides the reference name/number for the collection on our [collection search](#). This will provide a more detailed general description of this collection and importantly it is also where you can find any digitised material from that collection available to view online. Just enter the reference from the table into the search to find the record. Note that this search is case sensitive.

Collection Name	Description	Collections Online Reference	Catalogue availability
Bow Works Locomotive Drawings	Locomotive, carriage and wagon drawings for the North London Railway	BOW	PDF drawing list
British Railways Microfilm	A large collection of microfilm produced by British Railways. Principally carriage and wagon drawings from the grouping and nationalisation era including drawings of BR standard carriages and wagons. Drawings are sorted by drawing number so can be retrieved if the drawing number is known.		Awaiting cataloguing, please enquire for access.

British Railways Standard Locomotive drawings	Drawings for the BR standard locomotive classes from Brighton, Derby, Doncaster and Swindon drawing offices. Most of the drawings were microfilmed by the museum on aperture cards which can be viewed. The originals are not currently accessible.	BRSTAN	PDF drawing list
Charles Roberts	Charles Roberts manufactured wagons for the UK and export. They also built some carriages, including for BR standard Mk 1s and some trams.	2001-7112	Cataloguing in progress, please enquire for access
Clapham Early Drawings	A collection of early drawings from the 19 <sup>th</sup> century collected from various works by the British Transport Museum at Clapham.		Cataloguing in progress, please enquire for access
Click J G	John G Click was a railway engineer and worked with several notable engineers. The drawings are part of a larger archive that includes papers, photographs and sound recordings.	1994-8850, 1998-12020, 2002-7699	Cataloguing in progress, please enquire for access
Corporate Archive	Drawings and records relating to the National Railway Museum's estate and surrounding area. Includes drawings of the area prior to the formation of the museum. May be subject to access restrictions.	CORP/NRM/13/2	Archives catalogue to item level
Crewe Locomotive	Locomotive drawings produced for the London and North Western Railway and London, Midland and Scottish Railway.	CREWE	PDF drawing list
Crown Agents	Crown Agents acted as agents between overseas railways (mostly contemporary and former British colonies) and British railway rolling stock manufacturers. The drawings are on microfilm rolls and are sorted by order number. The drawing registers are also on microfilm and can be used to identify the required drawings	1988-1420	Awaiting cataloguing, please enquire for access.
Curzon Street	A collection of architectural and civil engineering drawings from Birmingham's first station at Curzon Street. The whole collection has been digitised and is available to view online.	CZNST	Archives catalogue to item level
Darlington locomotive works	Drawings of North Eastern Railway and London and North Eastern Railway locomotives, from Darlington and Gateshead works.	DARL	PDF drawing list
Davies & Metcalf	Davies and Metcalf produced brake and injector equipment for locomotives.	2015-7195	Awaiting cataloguing
Derby carriage and wagon works	Drawings for carriages and wagons produced for the Midland Railway, London, Midland and Scottish Railway and British Railways.	DERBYC&W	PDF drawing list
Derby locomotive works	Drawings for locomotives produced for the Midland Railway, London, Midland and Scottish Railway. It can be difficult to identify	DERBYLOCO	PDF drawing list



	the subject of the drawings so use of the drawing registers can be useful.		
Doncaster locomotive works	Drawings of locomotives produced for the Great Northern Railway, London and North Eastern Railway and British Railways.	DON/5	PDF drawing list
Eastern Region civil defence	A large collection of material relating to civil defence training and infrastructure in the BR Eastern region in the 1950s, includes drawings of signal boxes and other infrastructure like control shelters.	CIVE	Archives catalogue to item level
General Electric Company	A large collection of drawings and photographs relating to diesel and electric locomotive and multiple unit production by the General Electric Company and its predecessors including AEI, English Electric, Vulcan Foundry and many others. A description is available for the contents of each roll but not of each individual drawing. Arrange a visit to view the rolls.	GEC	Archives catalogue to box level
George Neumann	George Neumann was a railway contractor in the UK, France and Italy. His drawings are mostly of stations and bridges including Edge Hill station on the Liverpool and Manchester Railway and the Paris-Le Havre Railway opened in 1843.	1981-2037, 1981-2150	Awaiting cataloguing
Gorton	Gorton produced locomotives, carriages and wagons for the Manchester, Sheffield and Lincolnshire Railway (later Great Central Railway) and London and North Eastern Railway. Lists are available for the contractor rolls (locomotive bought from private manufacturers) but individual drawings are not listed. There is also a list of microfilmed drawings of the GCR 8K/LNER O4 class (which was also produced in large numbers for the ROD in WW1). Further drawings are currently being catalogued.	GOR	PDF drawing list. Cataloguing in progress of further drawings, please enquire for access.
Highbridge	Locomotive, carriage and wagon drawings for the Somerset and Dorset Joint Railway. Further drawings for this company are available in the Derby locomotive collection.	HIGHB	PDF drawing list
Horwich	Drawings of locomotives for the Lancashire and Yorkshire Railway and the London, Midland and Scottish Railway.	HOR	PDF drawing list
Kennedy Henderson	Kennedy Henderson were agents and consulting engineers for overseas railways and British manufacturers. The collection includes drawings of locomotives, carriages, wagons, ships and infrastructure for railways in South America and Africa.	1995-7017	Awaiting cataloguing, please enquire for access.



Land Plans	A collection of bound books of land plans of railway lines often showing tracks, buildings and details of land ownership.		PDF drawing list
LMS carriage and wagon	Carriage and wagon drawings for British Railways, London, Midland and Scottish Railway and their predecessors. Includes drawings from Derby, Earlestown, and Newton Heath, as well as a lot of private manufacturers.	LMSC&W	PDF drawing list
LNER carriage and wagon	Carriage and wagon drawings from Darlington, Doncaster, York, Gorton, Dukinfield, and Cowlairs works for the Great Northern Railway, North Eastern Railway, Great Central, Hull & Barnsley, and North British Railways and the London and North Eastern Railway. Drawings for the Great Eastern are in the Stratford collection.	NEC&W	PDF drawing list
LNER contractor rolls	Drawings of locomotives supplied to the LNER by private manufacturers.		Awaiting cataloguing please enquire for access.
Longhedge tyres and axle drawings	Very detailed a colourful drawings of the failure points in rolling stock axles and tyres.	LONGH	PDF drawing list
Melton Constable	Locomotive, carriage, wagon and infrastructure drawings for the Midland and Great Northern Joint Railway.	MELT	PDF drawing list
Midland Extension	Drawings relating to the Midland Railway's extension to London St Pancras station including bridges, equipment and architecture.	STPX	Archive catalogue to item level
Ministry of Supply	Drawings of the Second World War "austerity" locomotives produced for the Ministry of Supply including the 2-8-0 and 2-10-0 by North British and 0-6-0ST by Hunslet. Some rolls include indexes of their contents. Some of the 2-8-0 drawings are duplicated in other collections (especially Crewe) and the Hunslet drawings are duplicated in one of the LNER contractor rolls.		Awaiting cataloguing, please enquire for access.
Nasmyth Wilson	Collection of general arrangement drawings of locomotives and tenders from Nasmyth Wilson including locomotives for the UK and export.	NAS	Archive catalogue to item level
NER Headquarters	Architectural drawings of the former North Eastern Railway headquarters in York.	2005-7404 to 2005-7414	Archive catalogue to item level
NER New Bridge Street goods station	Architectural drawings of New Bridge Street goods station in Newcastle from 1906-1940.	2006-7250	PDF drawing list
Newton Heath	Carriage and wagon drawings from the Lancashire and Yorkshire Railway.	2000-8109	Cataloguing in progress, please enquire for access
North British Locomotive Co	A large collection of locomotive general arrangement drawings from the North British	NBL	Archive catalogue to item level

	Locomotive Company in Glasgow and its predecessors Sharp Stewart, Dubs & Co and Neilson & Co.		
North Eastern civil engineering	A large collection of architectural and civil engineering drawings from the North Eastern Railway and the same area during the LNER and BR periods.	NECIV	PDF drawing list
Oxford Publishing Company microfilm	The Oxford Publishing Company entered an agreement with British Railways to microfilm BR's engineering drawings and make them available for sale, principally to railway modellers. The collection comprises mostly general arrangement drawings and diagrams of all types of rolling stock from the early railways up to around the 1980s from across the UK, as well as thousands of trackplans of railway stations and junctions. The collection is held on microfilm aperture cards.	OPCMF	PDF drawing list - small number of drawings awaiting cataloguing
Peckett	Peckett & Sons were small locomotive manufacturers producing narrow gauge and standard gauge industrial locomotives mostly for the UK although some were exported.	PECK/6	Archive catalogue to item level
Plaistow	Drawings of locomotives, carriages and wagons for the London, Tilbury and Southend Railway. The company merged with the Midland Railway in 1912 and some locomotive drawings can be found in the Derby collection.	PLAI	PDF drawing list
Price & Reeves	Price and Reeves were railway contractors specialising in railway tunnelling. The collection includes drawings for parts of the London Underground and the Mersey tunnel. Large parts of the collection are closed due to security risks. Please contact archivists to enquire about access.	P&R	Archive catalogue to item level
Pullman	The Pullman company produced luxury railway carriages for British Railway companies and SNCF. The company was later bought by British Railways after nationalisation. Many of the drawings in this collection were produced by other private manufacturers or the railway companies themselves.	PUL	Archive catalogue to item level
Robert Stephenson & Co	This small collection includes locomotive drawings from the early period of this world famous manufacturer started by Robert Stephenson. Drawings include Locomotion for the Stockton and Darlington Railway and North Star for the Great Western Railway as well as some of the first locomotives in several overseas countries like Der Adler in Germany.	ROB	Archive catalogue to item level

Shildon	A small collection of drawings from Shildon wagon works including wagon drawings and works equipment/plans dating mostly from 1840s to 1860s.	1998-11437	Cataloguing in progress, please enquire for access
Signalling Project Group Croydon	A large collection of signalling equipment drawings from BR Southern region. 1920-1985.	1996-7909	Awaiting cataloguing
Southern Railway carriage & wagon	Carriage and wagon drawings for the Southern Railway, BR Southern Region and its predecessors the South Eastern & Chatham Railway, London Brighton & South Coast Railway and London and South Western Railway.	SRC&W	PDF drawing list
Southern Railway civil engineering	Civil engineering and architectural drawings for the Southern Railway and predecessors		Awaiting cataloguing
Southern Railway Loco	Locomotive drawings for the Southern Railway, BR Southern Region and its predecessors the South Eastern & Chatham Railway, London Brighton & South Coast Railway and London and South Western Railway. Some parts of the collection have been microfilmed and listed separately including a large collection of drawings for the Bulleid Pacific locomotives and the Q1 class. Further drawings on acetate photo negatives are being catalogued. Please contact for access.	SRLOCO	PDF drawing list, additional drawings awaiting cataloguing, please enquire for access.
Stoke	Locomotive, carriage, wagon and road vehicle drawings for the North Staffordshire Railway. Also includes drawings for the narrow-gauge Leek and Manifold Valley Railway and for munitions produced by the works during the First World War.	STOKE	PDF drawing list
Stratford	Locomotive, carriage, wagon, architectural and civil engineering drawings for the Great Eastern Railway and London and North Eastern Railway. This collection is unusual because the drawings include the original draughtsmen's work (the office copies), the master copies (photo tracings) and copies sent to the works (shop copies, often blueprints) and the collection has maintained this system of organisation. There is also a collection of drawings that formed a reference library for the company's engineers mostly sourced from other railway companies called the Bench Hole collection.	STRAT	PDF drawing list
Swindon carriage and wagon	Carriage, wagon and road vehicle drawings for the Great Western Railway. Also includes drawings from amalgamated Welsh railway company works.	SWIN	PDF drawing list

Swindon Locomotive	Locomotive drawings for the Great Western Railway. Also includes drawings from amalgamated Welsh railway company works. Drawings of diesel-hydraulic locomotives are listed separately.	SWIN	PDF drawing list
Wolverton	A large collection of carriage and wagon drawings for the London and North Western and London, Midland and Scottish Railways. Parts of this listing duplicate some of the LMS C&W collection list. There is a small selection of loco drawings.	WOLV/3/1 (loco) WOLV/3/2 (C&W)	PDF drawing list
Yorath Lewis Neverstop Railway	Yorath Lewis designed the “neverstop” railway, a futuristic driverless railway which ran at the British Empire Exhibition in 1924. The drawings are part of a larger collection of material.	YOR	Archive catalogue to item level

## OTHER MAJOR UK RAILWAY DRAWING COLLECTIONS

This table gives a quick summary of some other major railway drawing collections held at archives elsewhere in the UK. This list is far from exhaustive. Note that we are not responsible for the content of external websites.

Repository	Description
<a href="#">Network Rail Archives</a>	Network Rail, the owner of the national rail network, retains a very large archive of drawings which are used in the continued maintenance of the network. Their archives are not accessible to the public but drawings can be requested via their website. Drawings no longer required by the industry are usually transferred to designated local record offices.
<a href="#">Railway Documentation and Drawing Service</a>	RDDS holds rolling stock records created by British Railways prior to privatisation in 1996 for rolling stock which was still in use during and after the 1960s. The archive is not publicly accessible and there may be a charge for copies of drawings.
<a href="#">Historical Model Railway Society</a>	The HMRS collects railways drawings for use by railway modellers. Their collection includes drawings from the Metropolitan Cammell Carriage and Wagon Co and numerous private donations.
<a href="#">National Records Scotland</a>	The NRS is the designated record office for Scottish railway company records including drawings created by the works of the Scottish railway companies such as the Caledonian, Highland Railway and North British Railway.

<a href="#">Glasgow University Archives</a>	Glasgow University Library holds additional drawings from the North British Locomotive Company from 1903-1963. <a href="#">Catalogue details.</a>
<a href="#">Liverpool Maritime Museum</a>	National Museum Liverpool hold the records of Vulcan Foundry and related companies, covering mostly steam locomotives (diesel and electric traction is covered in our GEC collection). <a href="#">Further info.</a>
<a href="#">Statfold Barn Railway</a>	The museum archives at the Statfold Barn Railway holds the records of the Hunslet Engine Company including thousands of drawings from Hunslet and its predecessor companies including Kitson & Co, Hudswell Clarke, Manning Wardle and Kerr Stuart.
<a href="#">Great Western Society</a>	The Great Western Society holds a large number of drawings from Swindon works mostly concerning locomotive. Their collection includes many drawings that are not included in our own Swindon drawing collection.
<a href="#">National Archives Discovery Search</a>	The National Archives holds the business records of British Railways and its English and Welsh predecessors. It's Discovery catalogue also links to archive catalogues at local archives across the UK and can be used to search railway collections at multiple repositories.