



**Figure 1. The White Tower, the oldest part of the Tower of London, built about 1078-110. Photograph courtesy of The Board of Trustees of the Armouries**

# New Ways to Display and Interpret Arms and Armor

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MASTER OF THE ARMOURIES

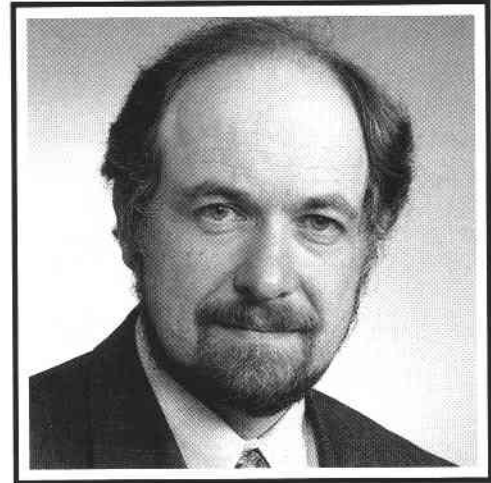
The outlines of the history and development of the Royal Armouries are well-known to students and scholars of arms and armor, but may well be repeated as an introduction to the rationale behind the establishment of a new Royal Armouries museum outside the Tower of London.

The Royal Armouries is Britain's oldest national museum, and one of the oldest museums in the world. It began as the main royal and national arsenal, housed in the Tower of London. Indeed, the Royal Armouries has utilized buildings within the Tower for making and storing arms, armor and military equipment for as long as the Tower has been in existence.

Although distinguished foreign visitors were allowed to visit the Tower to inspect the Royal Armouries since at least the fifteenth century, at first they did so in the same way a visiting statesman today might be taken to a military base in order to impress him with the power of the country. During reign of Queen Elizabeth I, less exalted foreign and domestic visitors were allowed to view the collections which then consisted almost entirely of relatively recent arms and armor from the arsenal of King Henry VIII. Henry had cleared the Tower's stores of the collections of his medieval predecessors to make room for the modern equipment required by a great renaissance monarch.

The Tower and its Armouries were not regularly opened to the paying public until King Charles II returned from exile in 1660. Visitors then came to see not only the Crown Jewels but also the Line of Kings, an exhibition of some of the grander armors, mounted on horses. These were made by such sculptors as Grinling Gibbons and represented the 'good' Kings of England. Also on display was the Spanish Armoury, containing weapons and instruments of torture said to have been taken from the Invincible Armada of 1588. The Royal Armouries had become, in effect, what it has remained ever since; the national museum of arms and armor.

The collections grew steadily during the great age of empire building which followed. The Board of Ordnance, with its headquarters in the Tower, designed and tested prototypes and organized the production of huge quantities of regulation arms of many types for the British armed forces until its abolition in 1855. Also, throughout this period,



trophies of all sorts continued to be sent to the Tower and displayed as proof of Britain's continuing military success.

Thus far, the development of the Royal Armouries mirrored that of the other royal armories of Europe—as dynastic armory and national arsenal—and its collections were all obviously historically connected to its home within the walls of the Tower of London. However, early in the nineteenth century the nature and purpose of the museum changed radically. Displays were gradually altered from exhibitions of curiosities to historically accurate and logically organized displays designed to educate the visitor by illuminating the past. As part of this change, items began to be added to the collection in new ways—by gift and purchase—with this increased rate of acquisition continuing to this day.

In this way, the collection has developed enormously. The 'old Tower' material has been joined in the last 150 years by the worldwide comparative material which now makes the Royal Armouries one of the greatest collections of its type in the world. Gradually the pace of change has increased. Today the museum acquires relatively little material relating to the Tower and much concerning the worldwide history of arms and armor. This was reflected in the redisplaying of the collections within the Tower from the late 1960s to the mid-1980s. During this time, the historic Armouries collections in most of the galleries were swamped and subsumed by displays attempting to tell the generalities of the development of arms and armor around the world. The time had come to look at expanding the operations of the museum if it



Figure 2. Armour of King Henry VIII, made in the royal workshops at Greenwich in 1540. (II.8; VI.1-5)  
 Photograph courtesy of The Board of Trustees of the Armouries

was to continue to develop as a modern museum and yet remain true to its roots.

From 1977 onward, under the direction of then Master of the Armouries Nick Norman, the museum began to consider expanding outside the Tower to increase public access to its growing and increasingly diverse collections. Ten years later, the Royal Armouries signed a lease with Hampshire County Council and took possession of Fort Nelson, near Portsmouth, which it now operates as a museum for its large collection of artillery. For the first time in its long history the Royal Armouries was responsible for displays outside the Tower of London.

In the following year, 1988, we took a step back from the pressure of immediate work and considered the longterm future of the museum and its collection. We wanted to increase public access still further and give ourselves opportunities to show and interpret the major parts of the collection which had no direct relationship to the Tower of London

beyond of the restricting confines of an ancient Royal Palace and Fortress run by another organization.

In 1990 after two years of preliminary research and deliberation, the decision was made to establish in the north of England a new Royal Armouries in which to house the bulk of the collection of worldwide arms and armor. This would allow the Royal Armouries in the Tower to concentrate on the display and interpretation of those parts of the collection which directly relate to the Tower of London. The concept of the Royal Armouries in Leeds had been born, although at this stage Leeds had not been selected.

Thereafter, the development of the concept and the search for a location and the necessary funding went hand-in-hand. At first, plans were drawn up and negotiations undertaken to establish the new museum site in Sheffield's Lower Don Valley. Other cities then expressed interest and a short list was drawn up from which the Trustees of the Armouries made their final selection. By 1991, Leeds had been chosen as the location. Funding of £28.5m had been secured by 1992—£20m from the Department of National Heritage, £5m from the Leeds Development Corporation and £3.5m from the Leeds City Council—subject to the remaining £14m required being raised from the private sector. Meanwhile, the merchant bankers Schroder Wagg were appointed as financial advisers to the Royal Armouries and were working with both the senior staff of the museum and the British Government to find a way of involving private sector investment in the project. By the spring of 1993, an investment memorandum was approved and the new museum was ready to be launched as the first Private Finance Initiative project in the Heritage sector. The venture capital company, 3i, quickly took up the challenge and by 14 December 1993 all investments and all agreements were in place. After five years of planning the new museum was certain of becoming a reality.

This new museum was developed specifically to exhibit the collections of the Royal Armouries to the visiting public in the best possible way. Therefore, we began with the question "How do we want to display our collections?" The answer to that, together with answers to questions about how the work of the museum was organized, dictated the type of building that we commissioned.

The answer came in two parts. First, we agreed that we wanted to tell the stories of the development and use of arms and armor around the world for war, sport, hunting, self-defense and fashion. Second, we decided that to do this successfully we needed to use all the available modern communication and exhibition techniques—including film and audio-visual aids, tableaux, hands-on opportunities to learn using both computers and real objects, and live demonstrations of craft and weapons-handling skills.



Figure 3. The Line of Kings, pen-and-wash drawing by Thomas Rowlandson, about 1800. (I.45)  
Photograph courtesy of The Board of Trustees of the Armouries

These decisions were used as a basis to develop a brief for the architectural and design teams, which led them to develop the type of museum building that we wanted. Fundamentally, in design terms, there are only two types of museum: processional museums where the visitor is led from room to room in a particular order, usually chronological or thematic; and radiating museums where the visitor explores the displays in any order from a central point.

Given that we wanted to tell a series of linked but different stories, each of which could be enjoyed on its own or in any order, the architectural brief asked for a radiating museum with a central circulation spine from which the galleries could be visited in any sequence. Based on this and the overriding need to make the building welcoming and, friendly, the Street was born—a canyon-like atrium rising the full height of the museum, from which every gallery can be approached.

The Royal Armouries was not intended to be a 'black box visitor attraction'. It was designed as a museum for the 21st century, using the best of traditional museum design, and it was developed quite consciously to show its collections in relationship to the real world in which we live. The displays seek to make the historical stories relevant by comparing them to the present day. The building was

designed to reinforce this by allowing the modern world to permeate into the galleries in which those stories are told.

Quite literally, the building has been designed around the collections of the museum and the individual galleries within have been arranged to allow the visitor to take in the experience. The displays are intended to entertain and stimulate a desire to learn without trivializing their subjects. This has meant developing a rhythm to the exhibitions so that a balance exists between standing and sitting, watching and doing, looking at real objects and explanatory films, static display and active demonstration; a balance which stimulates the desire to find out, and prevents aching feet and the yawn of boredom which all of us have experienced from time to time in museums.

One design team, covering all disciplines, has worked on the project from the beginning with each member gaining inspiration from the others and at the same time contributing to the individual's work. It is the first time in Great Britain that every aspect of a museum has been designed in this way from the beginning.

This had always been the intention—those of us who developed the concept knew that we needed an integrated team to produce the seamless result for which we all aspired. After a number of false starts in a complex learning process,





**Figure 4.** Tournament armours as displayed in the White Tower from the early 1970s. Photograph courtesy of The Board of Trustees of the Armouries

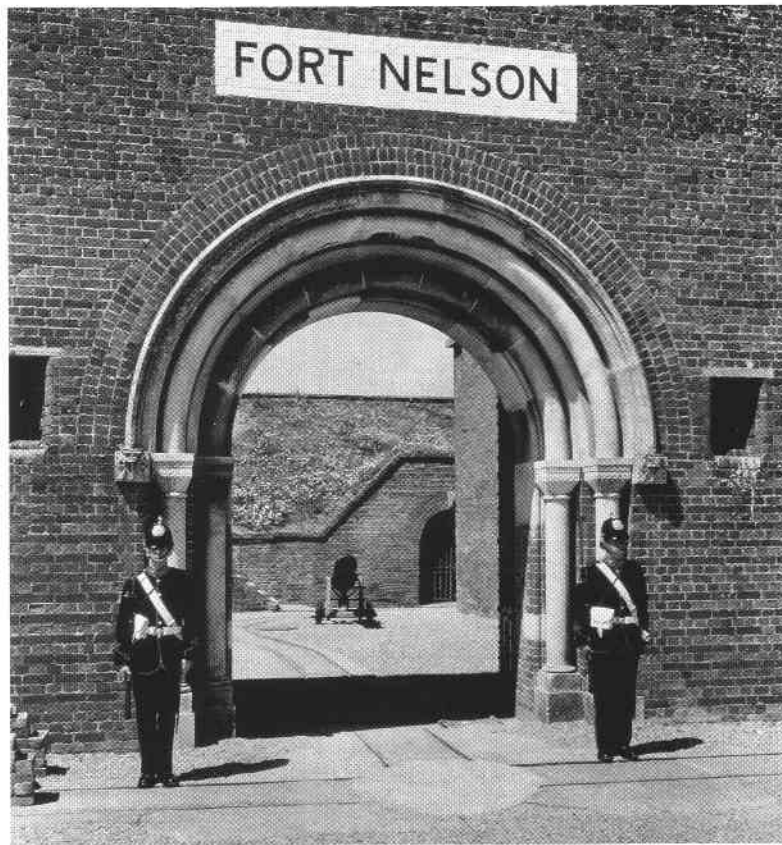
the need for close integration was solved by the appointment of the architect, Derek Walker, as head of the display design team.

The site for the new museum was an interesting one; a tongue of land between Clarence Dock and the River Aire on the edge of the center of the City of Leeds, the biggest city in the county of Yorkshire. Clarence Dock was constructed in the 1840s under the supervision of the engineer George Lether. It was built of giant gritstone blocks from the Pennines, initially as a single 100m × 50m basin, but before the turn of the century extensions were added to the west and south. The docks marked the head of the Aire and Calder Navigation that linked Leeds to Hull and the North Sea, enabling freight to be transferred to the smaller craft that could use the Leeds-Liverpool canal that linked the City with the Irish Sea and eventually the Atlantic. Before its business was undermined by the railways, Clarence Dock handled significant tonnages of mixed cargo, particularly timber and potatoes, for both transit and storage. In the early twentieth century much of the land around the dock was used for recreation and sports such as cricket and football. Over the years, the area declined into a run-down neighborhood of small businesses—sawmills, timber yards, oil and petrol storage depots, builders merchants yards and a lead smelting plant.

Nevertheless, this was by far the most promising of the five sites offered by the competing cities. In addition to the stillness of the dock and the quiet drama of the river and weir, the site offered a substantial catchment population and proximity not only to the city center but also to the motorways approaching the city from the south.

The design team decided deliberately to limit the area available for construction by positioning the building as close as possible to the water edges, stacking the main galleries and supporting areas on six levels to complement two handsome, listed, 19th-century flax mills on the river's east bank—which were in the process of being recycled for new uses. The Tiltyard and its supporting facilities, the Craft Court and the Menagerie Court, were laid out along the river bank east of the main building and visitor parking was provided in the area south of the museum contained by the loop road.

These early decisions on positioning and massing provided a clear framework for the articulation of the main elements of the museum building itself. With its five main galleries vertically superimposed, the building needed a single dramatic interior space to double as an entrance concourse and a consistent point of reference. The covered Street, 54 m in length, rises 30 m through the full height of the building, providing light penetration and a focus for front-of-house and out-of-hours activities at ground level.



**Figure 5. Fort Nelson, the Royal Armouries Museum of Artillery.**  
Photograph courtesy of The Board of Trustees of the Armouries

Located at the north end of the Street are the main lifts and Hall of Steel, a grand stairway containing a mass display of weapons and armor from the collection. At night the, Hall of Steel—with its internal lighting and glass lantern—acts as a beacon to the city center and is visible to traffic dipping over the crest of the hills on the M1 approach to the city from the south.

The Street is the link between the museum's main entrances from dockside to the west and from the main drop-off and parking areas to the south. Around the Street the main elements of the museum are clearly articulated; larger gallery spaces, cinema stack, Education Department and Library to the east; smaller gallery spaces, restaurants and shop to the west. Galleries are linked by bridges crossing the street at four levels. An administration block and storage/conservation block are at the southeast and southwest corners of the building, where secured access for vehicles is integrated within the building envelope.

The materials of the exterior were chosen to reflect the character and quality of the collection—metallic engineering brick in gun metal grey, stainless steel, bead-blasted and polished, and a mica-flecked pre-cast stone; all set on a generously coursed strong granite base. This deliberately cool exterior is balanced by a warm and welcoming interior. Additionally, to encourage people to use the building, the museum was designed to be open and permeable at ground

level with free public access to the street, bistro, restaurant and museum shop. These spaces are fully glazed to both the Street and the Dock. The amount of glazing is reduced at the upper levels because of the need to ensure the security and physical preservation of the collections and to show them in dramatic settings that require controlled rather than natural lighting. Nevertheless, the importance of relating the collections and visitors to their surroundings has been recognized in the detailed design development. There are naturally lit areas in all the galleries where views of the river, Dock and park can be enjoyed while browsing through the collection, enjoying some refreshment or simply resting.

As we have seen, the new Royal Armouries was intended to tell a series of stories about how arms and armor have been used through the ages. There are five major object galleries—War, Tournament, Hunting, Self-Defence, and Oriental—together with a Newsroom where all the stories are brought up-to-date and dealt with as current affairs. There is also a Craft Court where craftsmen work at their traditional crafts, a Menagerie Court where the working animals live, and a Tiltyard for major external demonstrations; in addition the Hall of Steel with its traditional massed displays to remind us of our past. Although linked, all of the museum's stories are self-contained and can be visited and appreciated in any order. The museum has been designed with a simple

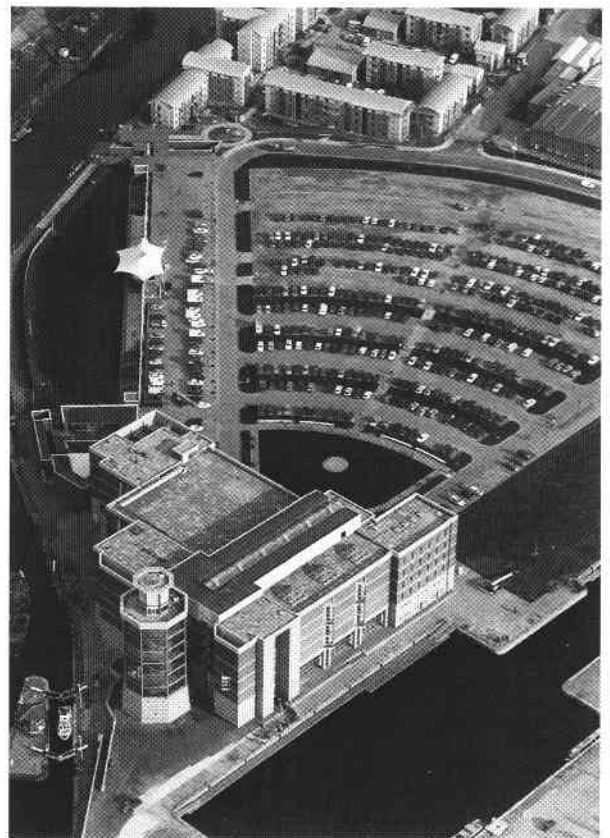


**Figure 6. The site at Clarence Dock before building commenced.**  
Photograph courtesy of West Yorkshire Police Photographic Department.

central circulation pattern focused on the north end of the Street with the main displays located on the two upper floors, both partially mezzanined. Each gallery is entered from the Street, which acts as a point of reference to prevent visitors from feeling disorientated or lost. Normal access between the different floors is by staircase or a battery of glazed lifts which allow the disabled the same free movement around the building as all other visitors.

Like any other museum, the new Royal Armouries was designed specifically to contain a great number of very valuable exhibits which are susceptible to deterioration. This necessitated a very stable internal level of temperature, air movement, and humidity. Light, while necessary, is also corrosive to exhibits, and therefore had to be carefully controlled. A satisfactory environment was achieved by a massive envelope of blockwork and concrete exposed so that it reacts directly with the space, punctured by small windows to minimize solar gain. Air conditioning was deemed essential to create an even and controlled environment.

The system selected was a displacement air-ventilation system. Cool air is introduced to the gallery spaces at low level and at low velocity. This cool air is then generally mixed with the ambient air by the movement of people in the space; as the air warms from the heat of lighting, other equipment,



**Figure 7. Aerial view of the completed building.**  
Photograph courtesy of Paul White, Wakefield.

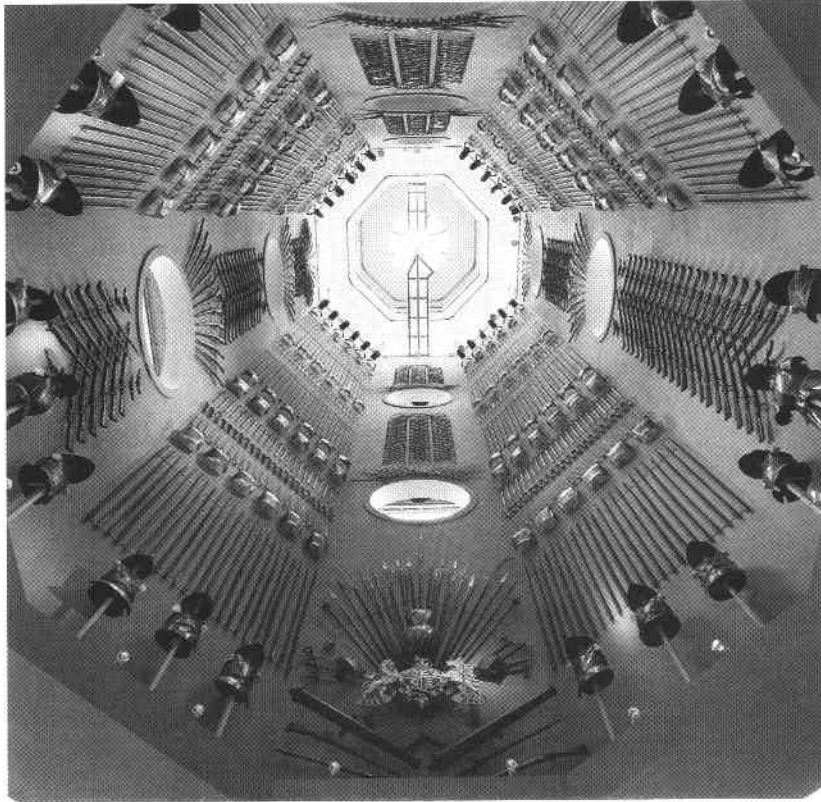


Figure 8. Looking up inside the Hall of Steel.  
Photograph courtesy of The Board of Trustees of the Armouries

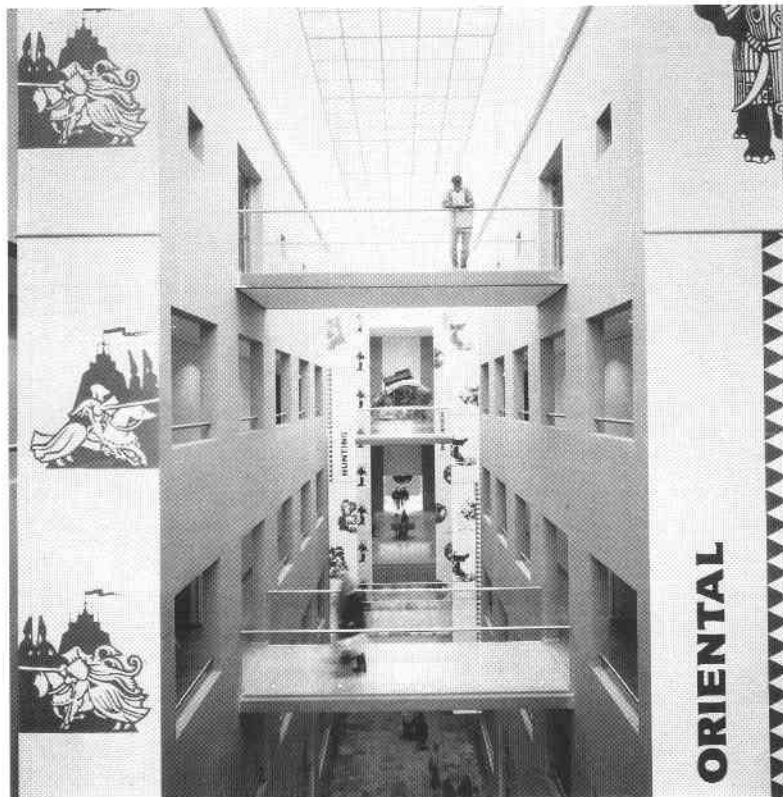


Figure 9. View of the Street showing banners directing visitors to the galleries.  
Photograph courtesy of The Board of Trustees of the Armouries



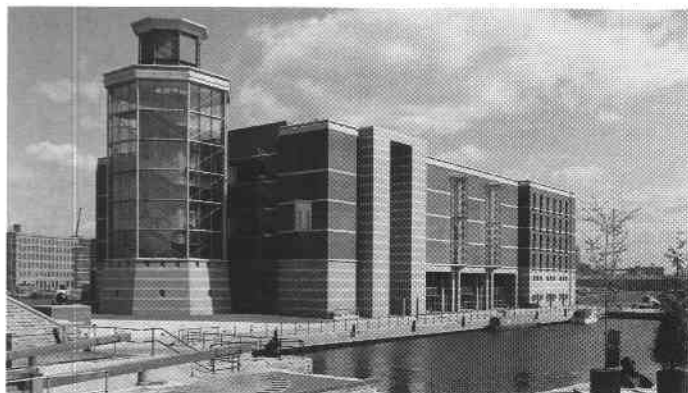


Figure 10-1. The exterior of the museum viewed from the north. Photograph courtesy of The Board of Trustees of the Armouries



Figure 10-2. The south facade and main entrance of the museum. Photograph courtesy of Paul White, Wakefield.



Figure 10-3. The Nelson bistro. Photograph courtesy of Paul White, Wakefield.

people etc., it rises through the gallery space and is extracted at high level in the ceiling above.

Our conservators had to work closely with the design team to ensure that the new museum building and its new displays met the increasingly stringent criteria for environmental conditions and use of inert and safe materials that all museums now have to impose. They also had to work with curators and designers in creating the object displays, making sure that all the individually hand-crafted mounts and brackets that are required safely and elegantly to display thousands of precious objects. With our Registrars, they have had to



Figure 10-4. The War gallery showing the central cruciform display. In the background a partial reconstruction of the original setting of the Littlecote Armoury can be seen. Photograph courtesy of The Board of Trustees of the Armouries



Figure 10-5. The Tournament gallery. Photograph courtesy of The Board of Trustees of the Armouries

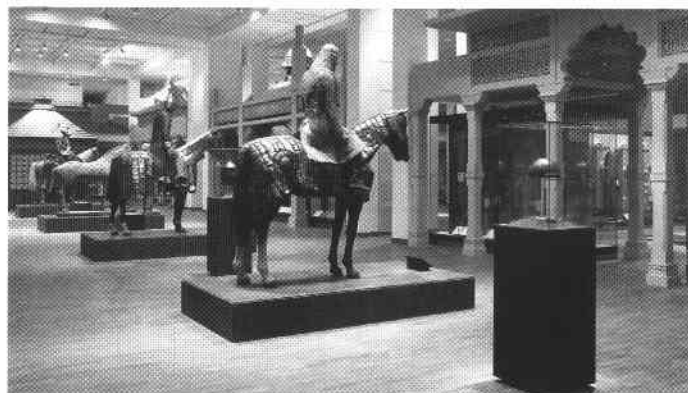


Figure 10-6. Equestrian figures in the Oriental gallery. Photograph courtesy of The Board of Trustees of the Armouries

organize the packing in London, the safe transport to Leeds, and the unpacking of the objects in the collection; whether they were destined for display or the reserve collections. They then had to organize the safe installation of all the displays according to the tightest of timescales, and to coordinate with all the other craftsmen and consultants to ensure that everything came together at the right time.

It was a colossal task, which involved tracking and organizing the work to be done on our computerized collections management system. Once a case layout was agreed in the Tower, the objects were sent back to store or



**Figure 10-7.** The Self-defence gallery. A figure of a contemporary police dog-handler provides a dramatic atmosphere. Photograph courtesy of The Board of Trustees of the Armouries



**Figure 10-8.** The Hunting gallery houses a number of major dioramas. This one shows pig-sticking in mid 19th-century India. Photograph courtesy of The Board of Trustees of the Armouries

display to await packing. The position of each in Leeds was recorded on computer so that when the time came to pack, items from around the museum that were to be displayed together in Leeds could be gathered quickly and packed together. Meanwhile, the mounts for each individual object were numbered, recorded and packed—display case by display case—so that they were readily available in Leeds when required. When all these packing cases and crates arrived in Leeds their individual numbers and locations had to be recorded, so that when particular objects or brackets were required for mounting they could be found swiftly and delivered efficiently to the two- and three-person teams undertaking the display mounting. At the same time the basic, essential, painstaking, and highly-skilled work of conservation had to proceed, even during the period of packing and moving the conservation laboratories and working areas from London to Leeds. Major work was required, especially on the Oriental arms and armor with its preponderance of fragile fabrics, before the collection could be safely moved; let alone be displayed in a manner to do justice to its quality. Major improvements in the condition of many of our fabric armors were achieved during this frantic period in less than ideal working conditions, and a wholesale renovation of our

unique elephant armor was completed. That this and all the other work was achieved, is a tribute to the professional skill and dedication of our small team of conservators.

The powerhouses of any museum display or exhibition are the curators, the museum professionals whose love and knowledge of their collections is the essential ingredient on which everyone else in the creative team feeds. All of us involved have now discovered how much more true this is for an entirely new museum. In this project the curators were given a difficult task—to create in just over two years five major galleries using a multiplicity of display and interpretative techniques, many of which were new to them, in order to show the museum's collections in a very different way.

Every idea, every decision, every move needed and received curatorial input. Every consultant came to rely upon the knowledge and skills of the curators. As a result, the workload was phenomenal. One day displaying objects in traditional fashion, the next selecting illustrations, the next in costume on a film set, the next writing labels, the next researching a detail of the costuming and equipping of one of the many life-like figures, the next agonizing over what to leave out of a film script, the next advising on the storage of collections in the new museum, the next working on a computer interactive program, the next begging or borrowing something we did not have but needed, and sometimes having to juggle with most of those and many others in just one day.

Each of the five galleries had its own team and its own team leader or gallery coordinator, but, because the staff of the Royal Armouries is small, most were involved in more than one gallery. The teams met together regularly to discuss progress and sort-out problems and all reported directly to the Master of the Armouries as artistic director. Each gallery team worked to a brief and blue-print which had been developed in conjunction with them by the design team and the Master often over months of late-night discussions during the period when the future of the project was uncertain.

There were thousands of objects to display, over 200 showcases to fill, over 40 films to make, audio-visual and computer programs to develop, and many figure scenes to collaborate on and dress.

It should be remembered that all this was done by a staff of only ten curators, in addition to their normal work of responding to the needs and requests of the public and at a time when the Royal Armouries Museum of Artillery was being completed at Fort Nelson, plans were also being drawn up for the redisplay of the Royal Armouries in the Tower and most of the curators were relocating themselves and their families.

With the help of the design team it was the task of the



**Figure 11.** One of the largest and most dramatic dioramas shows the critical moment in a tiger hunt in 19th-century India. Its central position in the Street provides great impact.  
Photograph courtesy of The Board of Trustees of the Armouries

curators to develop new ways of displaying arms and armor in order to communicate a different and vivid view of the subject to the public visiting the museum. In the planning stage, discussions ranged outside the strait-jacket of conventional museum wisdom; we talked about the power of music and the spoken word, the fusion of the object with a contextual image, the overwhelming effect of a great film and theater. We knew we needed all these within the museum if we were to interest the general public in our subject, but they needed to be used in a way truly to enhance rather than to swamp the traditional display of the collections of the museum. The new museum takes full advantage of architectural theming, explanatory text and illustrations, tableaux, scenes, film, sound and computers to bring the object displays to life for the general visitor. It also relies heavily upon what, in terms of the arts, our country does best— theater and drama.

Specially trained “interpreters” were recruited and trained to work with the collections and subjects of the museum and explain them to the visiting public. These interpreters came from a wide range of backgrounds. Most are actors, all have a love of history, and most could already fight and ride before they came to us. But stage fighting and “theme-park jousting” are very different from the reality that

we attempt to portray. Regardless of their background and however developed their skills, our interpreters all have an intensive period of training. Training, scripting and development is a group activity that requires a team capable of working together as a creative unit. The task of creating this team has fallen chiefly to our Director of Live Interpretation, John Waller. John spent 30 years choreographing fights for stage, film and television, and teaching stage fighting in the major London drama schools. Without first his encouragement during the development stage of the project and then his professional skills during its establishment, the new Royal Armouries would not have been nearly so activity- and demonstration-based as it now is.

There is much that can be done with live interpretation but there are also many pitfalls. First and foremost, it must do its job and help visitors understand and learn. For this reason we rejected the use of first-person interpretation because it seems, in Great Britain, to alienate rather than attract large numbers of people. In this form of interpretation a costumed performer refuses to come out of role or period and “pretends” to come from another time. We did not believe that this could possibly work in a newly built museum that deals with the full span of history. Therefore, in the Royal Armouries the knights in armor or the soldiers in uniform talk



**Figure 12. Packing objects for transport to Leeds.**  
Photograph courtesy of The Board of Trustees of the Armouries



**Figure 13. The display team at work: planning the design and mounting of a case.**  
Photograph courtesy of The Board of Trustees of the Armouries





**Figure 14-1.** Conservation of the Indian elephant armour in progress.  
Photograph courtesy of The Board of Trustees of the Armouries



**Figure 14-2.** Interpreters at work in the Tournament gallery.  
Photograph courtesy of The Board of Trustees of the Armouries



**Figure 15. Interpreters demonstrating running at the ring in the Tiltyard.**  
Photograph courtesy of The Board of Trustees of the Armouries

to the visitors as themselves, not as their characters. They assume a historical persona only for scripted performances.

There is a wide variety of types of interpretation that we are attempting to use in the museum, each with a special role to play.

First, there is the physical demonstration of how weapons and armors were used throughout the centuries. Outside in the Tiltyard we present demonstrations of military and sporting skill at arms (including jousting), show the development of arms and armor through historical pageants, and show how animals—horses, dogs, and hawks—have worked with man on the battlefield and in the hunting field. Inside there are two areas for major physical demonstrations. First, the Foot Combat ring in the Tournament Gallery where armored knights can be seen engaged in the popular sport of foot combat, using either sword or pollaxe. Second, the dojo between the Oriental and Self Defence Galleries, where a variety of demonstrations ranging from Japanese martial arts to European fencing and duelling are regularly organized. But none of these is overacted for theatrical effect. As far as possible, we show and explain what really happened, sometimes contrasting popular myth with a less dramatic or bloodier reality.

Another major use of interpretation is to put the objects in a historical context—to explain what they, individually or in large numbers, did or made possible. This requires that characters from the past talk about events which are important to understanding the collections. These vary from an Agincourt soldier and one of Marlborough's infantrymen on his famous march to the Danube reminiscing about being soldiers to a husband and wife writing letters to each other in the First World War.



**Figure 16. The leather-worker in the Craft Court.**  
Photograph courtesy of Paul White, Wakefield.

The third major item which interpreters do in the museum is to explain. They explain how the objects work and how they were used, either in special handling sessions or after the completion of a demonstration or interpretation when the weapons used are available for the audience to ask questions about and see. In the War gallery they also explain how battles were fought, by running simple wargames in a specially constructed wargaming area.

Finally, the interpreters are responsible for the story telling and puppetry which introduces the subjects of the museum to the younger visitors. One area of explanation the interpreters only briefly mention is how the objects were made, for this the visitor can discover for themselves. Next to the main building is the Craft Court where the visitor can see a selection of craftspeople working at their trades in traditional workshops. These include: an armorer working with a traditional charcoal forge, making armors as they were made in the Middle Ages; a gunmaker, making and repairing modern and antique guns, and combining the metal and woodworking trades which have traditionally formed the art of the gunmaker; and a leather-worker, making boots, saddles,



**Figure 17. Filming for the introductory film in the Tournament gallery.**  
 Photograph courtesy of The Board of Trustees of the Armouries



**Figure 18. A visitor using one of the computer interactives in the War gallery.**  
 Photograph courtesy of Paul White, Wakefield.

and the buff coats that were used by so many soldiers for defense during the Civil Wars of the mid-17th century.

The work of the interpreters is enhanced by the specially acquired and trained animals with which they often work. Between the Tiltyard and the Craft Court is the Menagerie Court where the birds, dogs and horses live. Visitors can see them here at close hand and meet and talk to their keepers and trainers.

The horses are our own and are specially selected to represent, as accurately as we can, medieval war horses. Four

of our horses—Fleur, Berwick, Messenger and Gauntlet are Lithuanian draft horses, specially imported for us. They have all been carefully trained to ensure that they are comfortable with swords and spears clashing next to their eyes and with the loud reports of firearms shot from behind their heads.

The hawks, falcons and dogs are provided and worked for us by the Lakeland Bird of Prey, Centre, Lowther Castle, near Penrith. They represent the basic types used in hunting: hawks for taking ground game and falcons for taking game birds on the wing; pointers and retrievers used in shooting, and running and scenting hounds used to chase game and bring it to bay.

There are many things which neither static display nor live demonstration can do to explain or interpret our type of collections. From its inception we intended our new museum to have a strong software base and to use film, sound, light, and computers to help tell the stories which we wanted to be encompassed within the museum. However, in planning for this we were conscious of the disadvantages as well as the advantages of reliance upon computers. They provide solitary, individual experiences, whereas research has shown clearly that most visitors to museums see it as a social, group activity and not a solitary one. This led us to develop a more “theatrical” approach than has been common recently in museums and we have attempted to use film and sound as far as possible to provide audience rather than individual experiences. We also limit the use of computers to the areas of



Figure 19. A 19th-century print showing the menagerie at the Tower of London. Photograph courtesy of The Board of Trustees of the Armouries

interpretation which only they can provide. For this reason and because we were determined not to experiment with the newest of technologies but rather to concentrate upon creative uses of well tried electronic and mechanical techniques, we were not tempted by the latest individual experience-based developments such as virtual reality. While this may come, we knew that its time had not yet come for us.

We have used films to do six very different things: to tell a story (of a battle or some other event), to provide a general historical or technological background, to show how things were made, to explain how they were used and the consequences of their use, to introduce a particular display or gallery, and to set a mood.

To achieve this, we used a wide variety of film techniques from fully filmed reconstructions of battles, through the editing and/or compilation of existing film footage, to the production of stills films using only images contemporary to the events described. The use of such a variety of film types was intentional, both because it will help prevent the museum from becoming predictable and because it will allow us to gauge the preferences of the public, so we can improve our use of the film medium over time.

The majority of these films are shown on in-gallery monitors and therefore need to be very short. Others are screened in cinemas or smaller theaterettes and these can be somewhat more lengthy. The length of the films varies from three to twenty-five minutes.

In searching for such a variety of film treatments we

concentrated more upon delivering good quality results rather than developing a museum style. Nevertheless, some sense of style and difference has been achieved. Our maxim has become: if we can, film it ourselves. Filming, rather than editing the filming of others, is very important in order to control quality and content. Where possible we have filmed dramatic events and not static pieces. Objects can best be seen in show cases, whereas films are best at showing these objects in action. We have avoided using to-camera presenters—they date films too quickly, and as much as possible, for similar reasons, have avoided showing people in modern dress. Finally, it will come as little surprise that we were not able to compete with feature films in the re-creation of battles. To compensate for this not only did we concentrate on the details of combat—how the arms and armor were used—but we developed a rather different “factional” style, a halfway house between feature film and historical documentary. We hope in future years to be able to continue developing our skills in this area and expanding the range of films available to the museum.

Sound on its own can be very potent. We used it in discreet areas to give a sense of a period or a subject, to share with the public personal reminiscences and experiences from the past, and to make them aware of the real sounds of battle. We used it in combination with lights and a tableau display to bring what to most visitors will be an obscure 16th-century Italian battle vividly to life. And in one area, the Sights and Sounds of War, we added a slide presentation and



major musical extracts to the mix to give visitors an impression of the range of human responses to warfare.

With our use of computers we have been careful to restrict them to areas in which they are particularly suited, but in doing so we have again attempted to provide a very wide variety of programs so that we can subsequently assess which are most popular and successful. Almost half of the computer terminals in the museum are in the War gallery and these are devoted to wargaming. In the appropriate section of the gallery visitors can pit their wits on battlefields from classical times to the present century. In playing one of the games they will learn something about the tactics and weapon's capability of that particular period. If they play all of the games they will learn about the development of tactics and weapons over the centuries. In the Hunting gallery we have developed programs especially for younger children to help them learn how to recognize animal tracks and match animals to their correct habitats. In the Self-Defence Gallery the insides of weapons and how they work are revealed. In the Tournament gallery the mysteries of heraldry are humor-

ously explained using cartoon characters and the complexities of armor garnitures are brought home in a timed jigsaw puzzle program. Finally, in the Oriental gallery visitors can access the museum's complete records on this discreet part of the collection.

The amount of work required to create the new Royal Armouries has been tremendous and the amount of creativity displayed by the team has been phenomenal. We have tried to find ways to make the subject of arms and armor more approachable, and understandable and appealing to the general visitor, without compromising historical accuracy and intellectual rigor. The visitors seem to approve of what we have done—the average stay is 4 hours or more in the museum—but it is not for us to say whether we have been successful. That question is for them and for you to decide. What we do know is that we have given new life to our museum which now operates on three very different sites. We now turn to the re-display of the major part of our collection which remains in the Tower of London, a task which will be completed in 1998.