

TAKE A CHAIR



NOTES FOR TEACHERS

Chairs are things that many people use everyday without thinking very much about them.

The Take a Chair workshop aims to encourage pupils to:

- investigate a design classic
- explore materials
- look at manufacturing processes
- think about ergonomics and structures involved
- look at the role of the designer and maker

There are strong links to art, design, technology and science in the designing and making activities. There are also links to improving literacy and numeracy skills by communicating ideas both verbally and written and considering the importance of accurate measuring.

CURRICULUM LINKS

KS2

Art and Design – Unit 4B (Take a chair)

Design and Technology – Unit 5B (Building structures)

KS3

Design and Technology – Unit 07bii (designing and making yourself)

KS4+

The world of the professional designer
Design Materials



QUICK NOTES

Chairs are for individuals to sit on.

They come in a huge variety of shapes, sizes and materials. Not all cultures around the world use chairs.

Designers need to know about 'ergonomics' or looking at how the human body relates to its environment.

They also need to know about 'anthropometrics' or the scientific measuring of the human body.

One chair design has to fit many different body shapes and purposes.

Gordon Russell learnt about chair construction whilst repairing antiques in the family business.

He then went on to create new designs to be made by craftsmen in the workshop.

One famous design from Gordon Russell Limited is the Coventry Chair, designed by Gordon's brother, R. D. Russell.

The Coventry Chair was commissioned in 1960 by the architect Sir Basil Spence for his project to replace part of Coventry Cathedral which was severely bombed in WW2.



The designer of the Coventry Chair R. D. Russell and his wife Marian Pepler, who designed textiles for Gordon Russell's company.

Two thousand chairs were made in English oak.

They were 'batch-produced' by machine but still made to a very high standard with fine materials.

The brief was to produce a modular design that could be used as an individual chair or be joined to make a pew-like set of seats.

The chairs cost £4 19s 6d each (about £63 in today's money).

The design was then adapted for different customers around the world.

INTRODUCTION

A chair is designed to support the human body whilst sitting or resting. There are basic attributes common to nearly all chair designs although many modern designers challenge those rules. It must, however, support the human body without tipping over.

Chairs are everywhere around us so start by identifying different types of chairs and their uses. Make a collection of chair images to include a wide-range of uses, purposes and designs:

- chairs used around school
- in the home
- ceremonial or celebration chairs
- mass-use chairs e.g. cinema, sports stadium
- indoor/outdoor
- different cultures
- other periods of history

SHAPE

Gordon Russell worked throughout the 20th century. His designs were initially influenced by the Arts & Crafts movement and the work of Ashbee and Gimson in the Cotswolds. Much of his early inspiration came from the antique furniture his father purchased to furnish the family's hotel, The Lygon Arms in Broadway.

The traditional shape of chairs depended on who was going to sit in it. Elaborate carving contrasted with the plain and functional or padded upholstery in sumptuous silks with woven rush seating. The work was carried out by craftsmen using hand techniques.

After WWI Russell developed a design ethos based on the principles of good quality design and manufacture but made affordable by harnessing the cost-effectiveness of batch production using hand and machine methods of manufacturing. Many other designers had now joined the company as Gordon Russell spent more time working on Utility Furniture programmes for the Board of Trade during the war, The Festival of Britain and then as an instigator of the Design Council.

FUNCTION

Chair design is often influenced by the way it will be used. Is it to be sat in for a short or longer period of time? Is it to be comfortable? Is it for domestic or work use and used by an individual or by many people? Is it to show the sitter's status or style?

The function of the chair also influences what materials may be used. The chair must bear the weight of a variety of sitters, and be safe!

THE COMMISSION

The architect, Sir Basil Spence, was commissioned to redesign the bombed shell of Coventry Cathedral. The city had been heavily bombed during WW2 as it was a key industrial target.

In 1960 Spence invited Gordon Russell Limited to design and produce the 2000 individual chairs required to fill the cathedral space. The brief was to produce a chair that was made of an English wood, sturdy and adaptable. One of the aims of the new cathedral space was to be able to have different configurations of seats for services, concerts and conferences.

Gordon Russell Limited



Designer: Professor R. D. Smart MBE, FRSA
The 1960 chair and the same size and style construction as the 2000 chair originally designed for Coventry Cathedral but its padded seat upholstered in a variety of colours offers additional comfort. It can be used individually, stacked or linked in banks for mass of a banking end and incorporates a prayer book rack and recessed handrail.

Dimensions: 21" wide, 17 1/2" front to back of seat, 20" high, seat height to centre front 17" (500 x 440 x 710, 440 mm).

This chair is made specially to order in any suitable timber and the price varies with the quantity ordered.



Church chair

Gordon Russell Limited
Bromley, Worcestershire
WR12 1AD
Telephone Bromley 01905
9710-480 1000

Gordon Russell Contracts Ltd
11 Ryeland Place
London W15 0DU
Telephone 01-429 5341/2

The chairs were to retain a 'pew-like' scale. Sets of six chairs were designed to be locked together with a long aluminium metal rod passing through the side seat rails. Securing six chairs at one time would reduce the dangerous scattering of single chairs in the event of a mass evacuation of the building.

Brochure for the Coventry chair

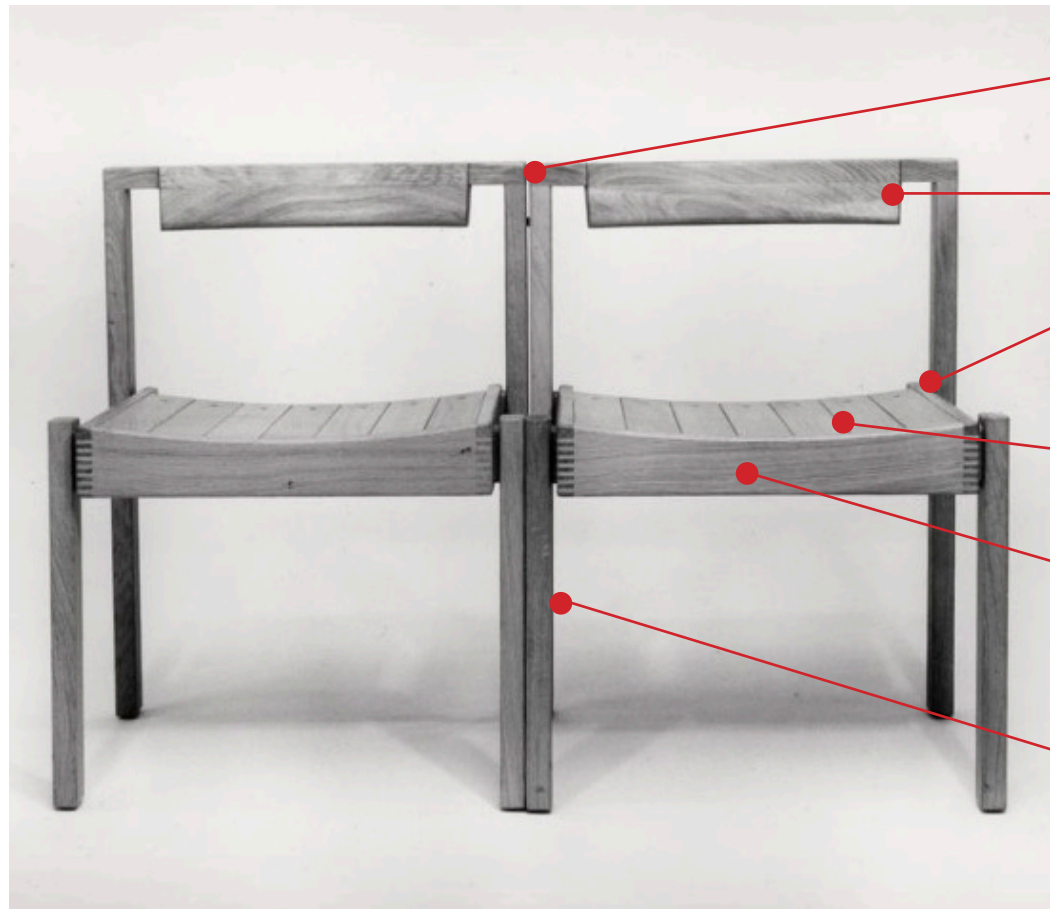
There were variations of the chair for clients both at home and abroad, including Winchester Cathedral, the Tower of London and in the USA.



Interior of the new Coventry Cathedral, designed by Sir Basil Spence with chairs by Gordon Russell Limited.

CONSTRUCTION

The chairs were made of English oak; pale in colour but with a strong grain pattern.



Finger or comb joint at top of back legs and back rail.

Shaped back rail

Finger joint at top of back legs and back rail.

Seat slats tongued and grooved to front rail then screwed at the back

Front rail

There were locking rods to secure multiple chairs together for safety reasons. This also allowed chairs to be configured in different arrangements.

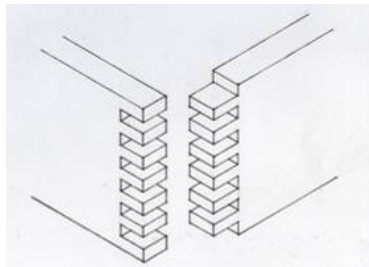
MANUFACTURING

The two thousand chairs were batch produced in the Gordon Russell Limited workshops in Broadway, Worcestershire.

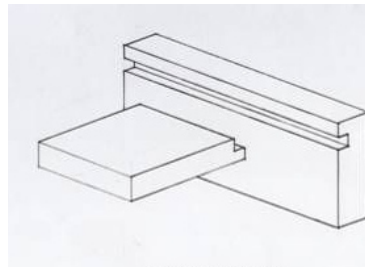
The joints, where the back legs join the back rail and the front and side rails, had to be strong and durable - the chairs were designed for frequent use and a variety of users. The joint style is called 'finger' or 'comb' joints. The long finger or tangs interlock to create a secure fixing and is one of the strongest joints as it provides a wide surface to glue.

The seat slats were fixed to the side rail with a 'tongue and groove' joining method. The wood slides into a slot to be secured.

Each part, or component, of the chair was produced by a variety of machines. The slats of wood making up the seats would have been 'chamfered' or bevelled by having the edges smoothed down. Each piece was made to precision - all the chairs had to be exactly the same size.



Comb or Finger Joint



Tongue and Groove Joint

FORM FOLLOWS FUNCTION

The Coventry Chair was developed to meet a number of design functions. It had to be a unit that could be flexible in how it was used but also be safe with many people leaving the Cathedral in an emergency.

Two thousand chairs were commissioned so there were issues of batch production methods, costs and materials. The chair had to be used as both a 'pew' type seat within Coventry Cathedral and a seat for music and concert audiences.



The chairs were designed to be easily stacked in an efficient and compact way.

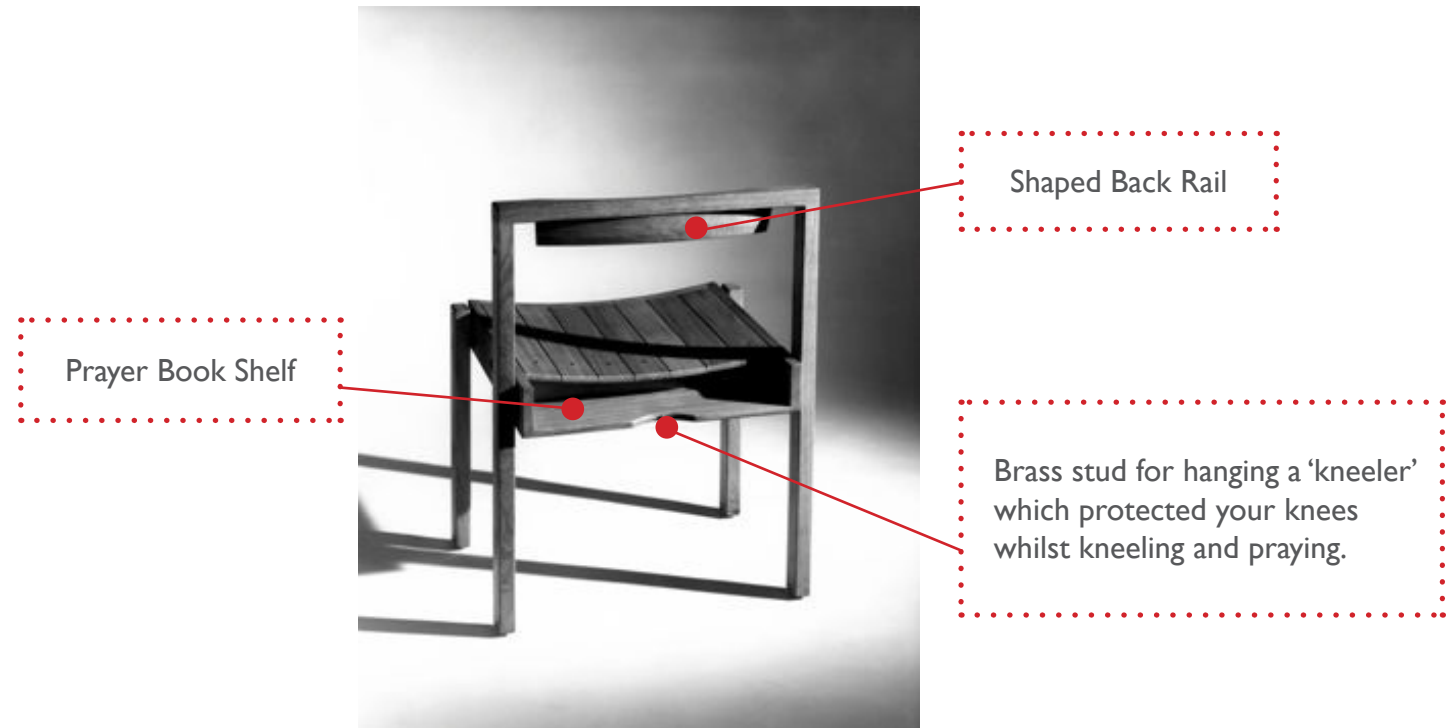
SITTING COMFORTABLY?

Designing the chair for comfort often depends on how often and for how long the chair will be in use. This is the world of ergonomics.

The Coventry Chair was to be sat on for approximately an hour and up to two or more hours for concert audiences. The lack of upholstery reflects the more restrained attitude to the design. This also meant little maintenance in cleaning or repairing material or leather seat coverings was required.

The back rest was gently curved to support the sitter's back. A shelf behind the seat was provided for prayer books and concert literature. The small brass studs were to hang kneeling hassocks out of the way of passing feet.

The design for this chair was reinterpreted for a variety of church clients. Interestingly the American market ordered theirs with leather upholstered seats!



DESIGNERS IN THE 1960s

Contemporary designers to R. D. Russell designing in the 1960s who were either working in the same tradition as the Russell Company or who were influenced by the work of Gordon Russell included:

Terence Conran (1931-)

He had worked as a young designer on the Festival of Britain in 1951. He drew much of his inspiration from Russell's design work. He went on to start Habitat in 1964 changing the buying public's attitudes to new furniture design.

Arne Jacobsen (1902-1971)

Jacobsen was an architect-designer from Denmark. He designed the dining hall at St. Catherine's College, Oxford and commissioned Gordon Russell's company to design and make the dining hall furniture.

Charles Eames (1907-1978)

Originally trained as an architect in the USA, Eames was interested in the new manufacturing technologies of plywood and plastics driven on by WW2.

His entry into the Museum of Modern Art International Competition for Low-Cost Furniture was eventually put into production by the Hermann Miller Company and has become as design classic.

THE NEW RETRO?

Furniture from the 1950s and 1960s has seen a return in popularity during the early part of the 21st century.



Ercol Brochure set from 1960s © High Wycombe Furniture Archive, Bucks New University

Designs are being revisited by new designers who are using the styles as a creative source of inspiration.

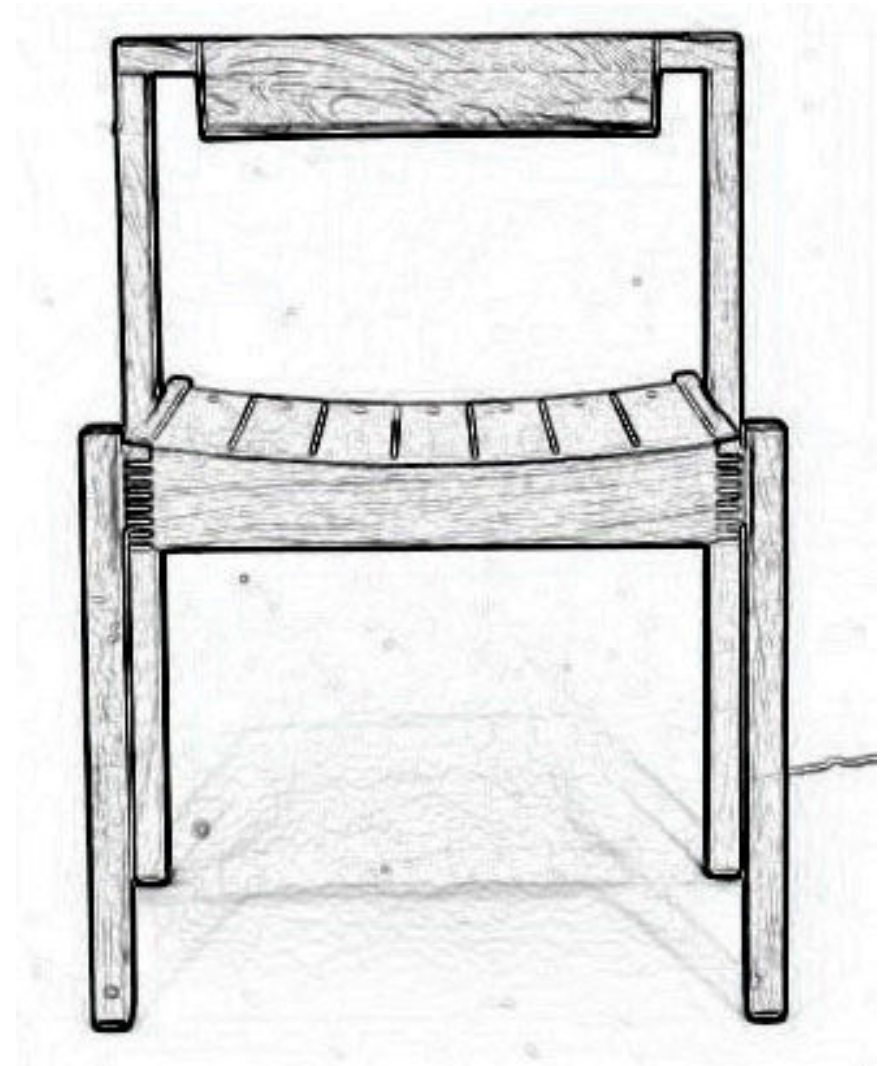
Same Ercol designed Windsor chair but transformed with upholstery by contemporary textile designer Sarah Jayne Guest.

© Sarah Jayne Guest, 2010



ACTIVITY ONE - DESIGN CHALLENGE

TASK! What design ideas would you use to give a 21st Century spin to the Coventry Chair? Add your design ideas to this sketch.



ACTIVITY TWO - ORIGAMI CHAIR PUZZLE



1. Decide which way the grain should run. Turn the paper so that the white side is now facing you.



2. Fold the paper in half and then unfold it.



3. Fold the right-hand side to the centre and crease.



4. Fold the left-hand side to the centre and crease.



5. Unfold the two sides and cut one of the four strips off.



6. Fold the paper top edge to bottom edge and crease.



7. Fold one corner across to meet the first crease.



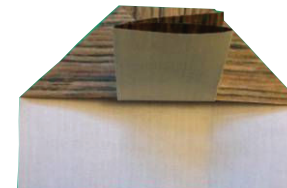
8. Now fold the remaining corner to the second crease.



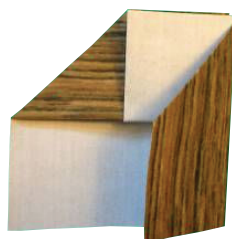
9. Now make a squash fold on one of the corners



10. Do the same squash fold to the other corner. The flaps will overlap in the centre



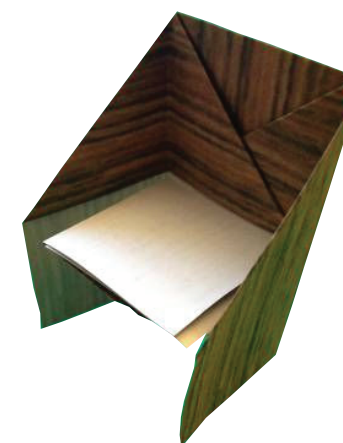
11. Lift the centre flap to meet the top of the paper.



12. Fold the right-hand flap across the centre and crease.



13. Fold the left-hand flap across the centre.



14. Lower the seat between the two sides. Voila! Here's your finished chair.

SOME FINAL THOUGHTS...

Obviously this origami chair is made from one sheet of thin paper. There are some design issues to resolve....

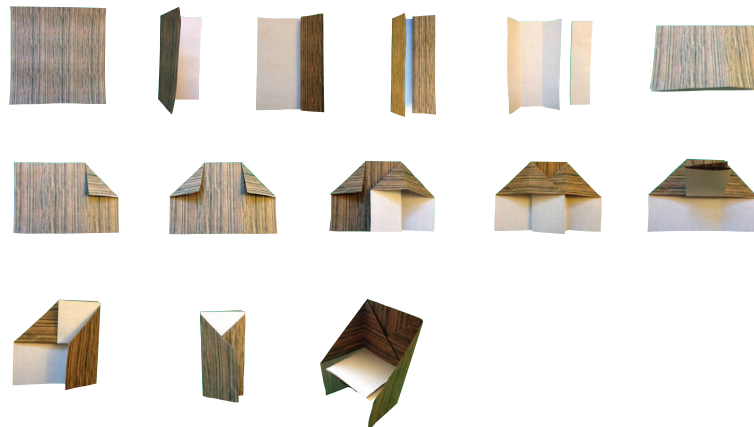
Does the chair design fail in any area and if so why?

How would you improve the chair's functionality?

If this was a full-scale piece of furniture how could you improve the chair's comfort for sitting on it?

How could it be adapted for different clients and/or uses?

You have used a wood-effect paper. What design would you create if using a plain piece of paper?



ACTIVITY THREE - LETHABY CHAIR

CHIPPING CAMPDEN MUSIC FESTIVAL 2012

In 1899 the Art Workers' Guild create and performed a masque that celebrated their principles and love of Arts and Crafts.

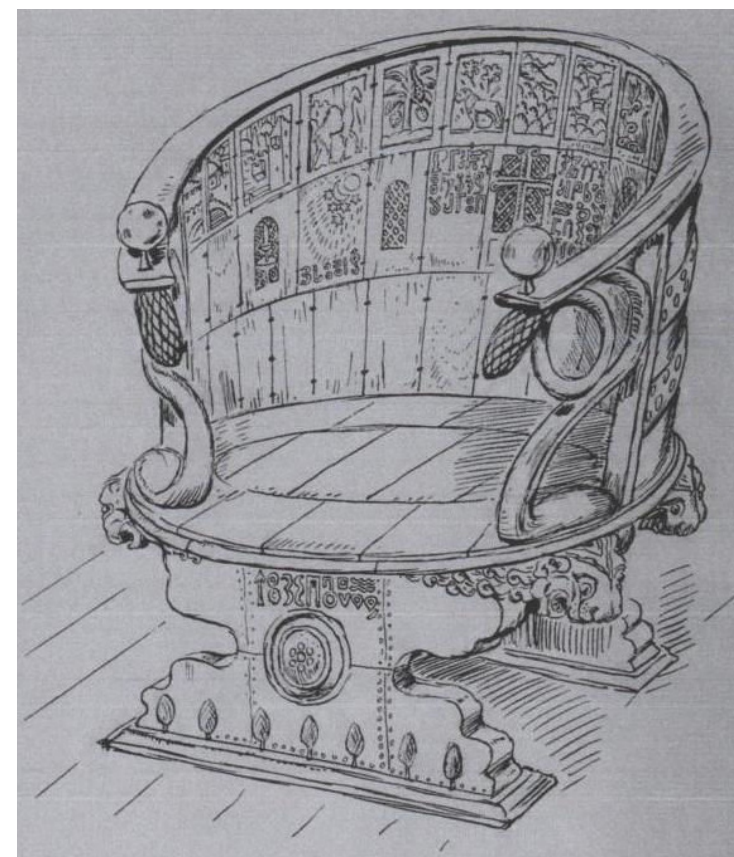
The group was led by C. R. Ashbee who encouraged the Guild to move to Chipping Campden shortly after the masque was performed at the Guildhall in London.

This chair workshop makes links between the Guild and the later design work of Gordon Russell, here in Broadway. His ethos of creating good quality furniture to be affordable by people other than the very rich has foundations in the work of Ashbee and his Guild.

For the masque many designers and crafts people were involved not just in the performance but also the set design. One piece of the set was a large throne by Mr. W. R. Lethaby. The masque explored the ideas of well-designed and well-crafted products that were true to their materials.

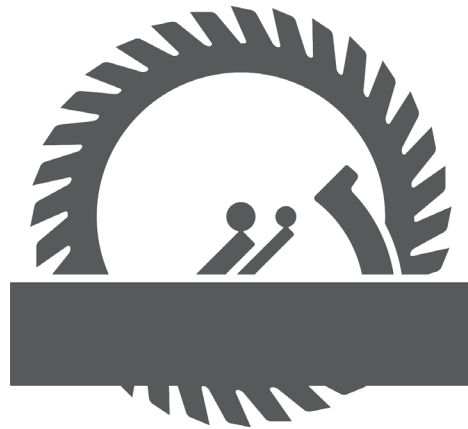
There is a character in the play called Jerrybuiltus - a reference to the phrase 'jerry built', meaning something makeshift or badly built. It reflects what many Guildsmen thought about poor Victorian and Edwardian design and manufacture!

It was a phrase used as far back as 1869 but its origins are unknown. It may be something to do with the biblical story of the walls of Jericho falling down!



Lethaby's design for the throne in the play.

TASK! Design a throne-like seat using what you have learnt about chairs - think about function, form and materials.



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RUSSELL
DESIGN
MUSEUM

www.gordonrussellmuseum.org