

The Safe House Project Pack

Made by the Learning team at RIBA

With special thanks to [RIBApix](#)

About this pack

- In this pack, you will find:
 - Some key information for adults to help understand how this project can be used to supplement and cover aims of school learning.
 - Sheets for children to lead their own architecture focussed design project.
- Each project is broken down into 4 parts:
 - Explore
 - Design based on a design brief
 - Make
 - Evaluate
- This fits with the Primary National Curriculum format for Design Technology (DT) learning.
- We have included Art & Design, Design Technology and Science curriculum aims in this project.

What the National Curriculum says children should learn:

Explore

Know about great artists, craft makers and designers, and understand the historical and cultural development of their art forms. (art)

Key stage 1 (5-7 year olds):

- explore and evaluate a range of existing products (DT)
- learn about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work (art)

Key stage 2 (7-11 year olds):

- investigate and analyse a range of existing products (DT)
- understand how key events and individuals in design and technology have helped shape the world (DT)
- To learn about great artists, architects and designers in history, describing the differences and similarities between different practices and disciplines, and making links to their own work (art)

Design

Key stage 1 (5-7 year olds):

- design purposeful, functional, appealing products for themselves and other users based on design criteria (DT)
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology (DT)
- to use a range of materials creatively to design and make products (art)

Key stage 2 (7-11 year olds):

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups (DT)
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design (DT)

Make

Key stage 1 (5-7 year olds):

- design purposeful, functional, appealing products for themselves and other users based on design criteria (DT)
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology (DT)
- to use a range of materials creatively to design and make products (art)

Key stage 2 (7-11 year olds):

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups (DT)
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design (DT)

Evaluate

Evaluate and analyse creative works using the language of art, craft and design (art)

Key stage 1 (5-7 year olds):

- evaluate their ideas and products against design criteria (DT)

Key stage 2 (7-11 year olds):

- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work (DT)

Science

Key stage 1 (5-7 year olds):

- describe the simple physical properties of a variety of everyday materials

Key stage 2 (7-11 year olds):

- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Key information and aims

Keywords – make sure you know what these words mean. Use a dictionary, the internet or an adult to help you.	Camouflage Safe House Bunker Section/Plan/Elevation Drawings	Flammable Fortification Exterior/Interior
Materials – what you will need to collect to do this project.	Things from the recycling bin – make sure they are clean! Tape or glue Scissors 2 pieces of paper Pencils, colouring pencils, felt tips	
Skills - what you should know how to do by the end of the project. Can you show someone else how to?	I can design and pitch with a client in mind I can use my knowledge of materials to propose solutions to problems I can communicate my ideas by drawing and speaking about them I can create 3D models of my ideas	
Knowledge – what you should know by the end of the project. Can you tell someone else about it?	I know about the stages of architecture design I know about defensive architecture I know about how the properties of materials can influence design	
Extension activities – other things you can do to build on your learning.	Do a scientific experiment which explores the strongest 3D shapes https://www.teachengineering.org/activities/view/cub_intro_lesson01_activity1	

The Challenge

The Prime Minister needs your help!

MI6 has received intelligence that the UK will face an attempted invasion by an unknown enemy. They are asking architects like yourself to design a safe house which will protect the prime minister from the invaders whilst he works. It must be strong, hard to find, and use suitable materials.

But first you need to do some very important research into defensive architecture...



Explore

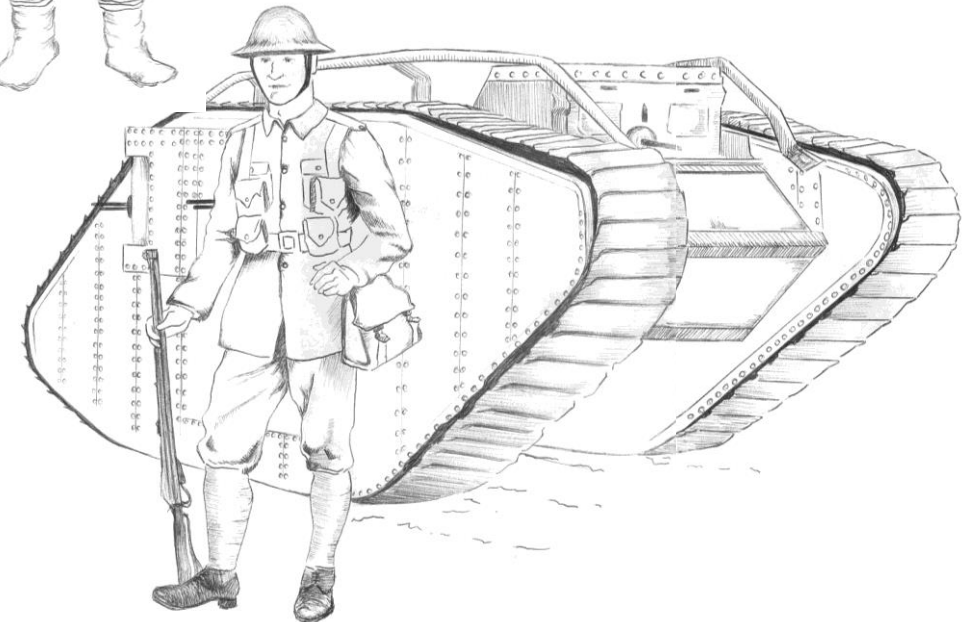
What type of attacks your building must survive

In the past many people have tried to invade parts of the UK, some you may even have studied in your history lessons!

Can you recognise any of these invaders?

Things to think about:

- What weapons did they use?
- How did they move around?
- Did they attack from above or below?
- How might this affect the design of your safe house?



Explore

Defensive architecture design

Examine the images on the next few slides to help you start thinking about what your safe house might look like. Try answering the questions below and make a note of anything you like or think works well as a defensive feature.

Things to think about:

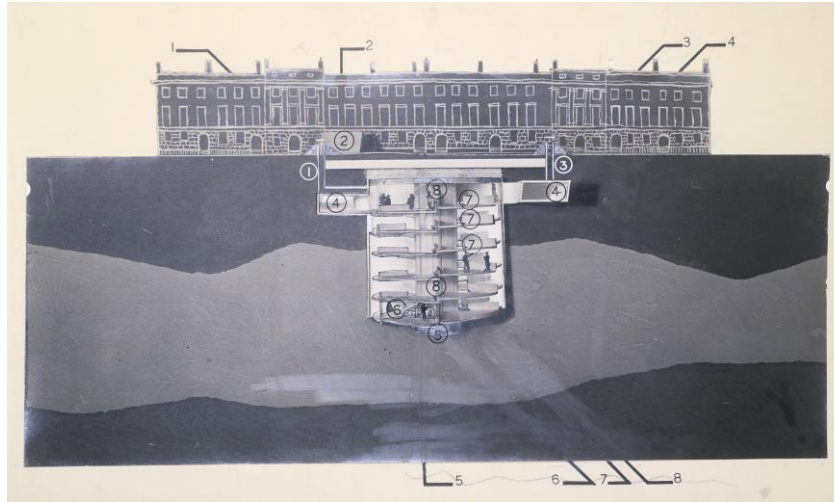
- Are they built to defend against land, sea or air invasions?
- What materials are used – are they flammable or easy to break?
- Are there any big differences between older and newer buildings? Why might that be?
- How do window and door sizes compare to the ones in your house? Why might they be different?
- Are there any common shapes being used? Which do you think are the hardest to knock down?
- How have they been designed to fit into the landscape?
- Are there any look out or warning systems in place?
- Are the fortification walls smooth or spiky?
- What colours are used – are they camouflaged?

Explore

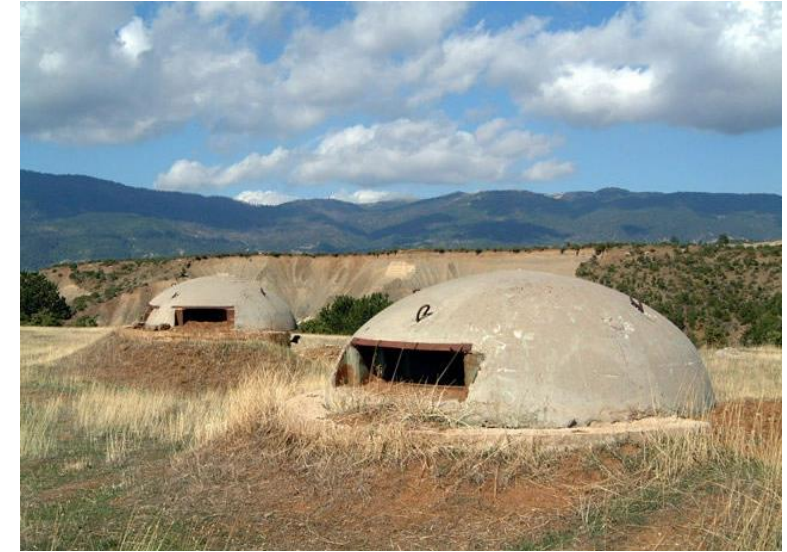
Defensive architecture design



Castel dell'Ovo, Naples, built C12th. By currybet, Flickr, CC BY-SA 2.0.



Design for a circular underground air raid shelter for Finsbury Borough Council, London by Sir Ove Arup, 1938. RIBA Collections.



An Albanian Bunker, designed by Josif Zagali in 1967. By Marc Morell CC BY-SA 3.0.



Bodiam castle by Sir Edward Dalyngrigge, 1385, East Sussex, England. Robert Elwall / RIBA Collections.



Alcatraz, San Francisco, designed by Major Reuben Turner in 1912. By Frank Schulenburg CC BY-SA 4.0.



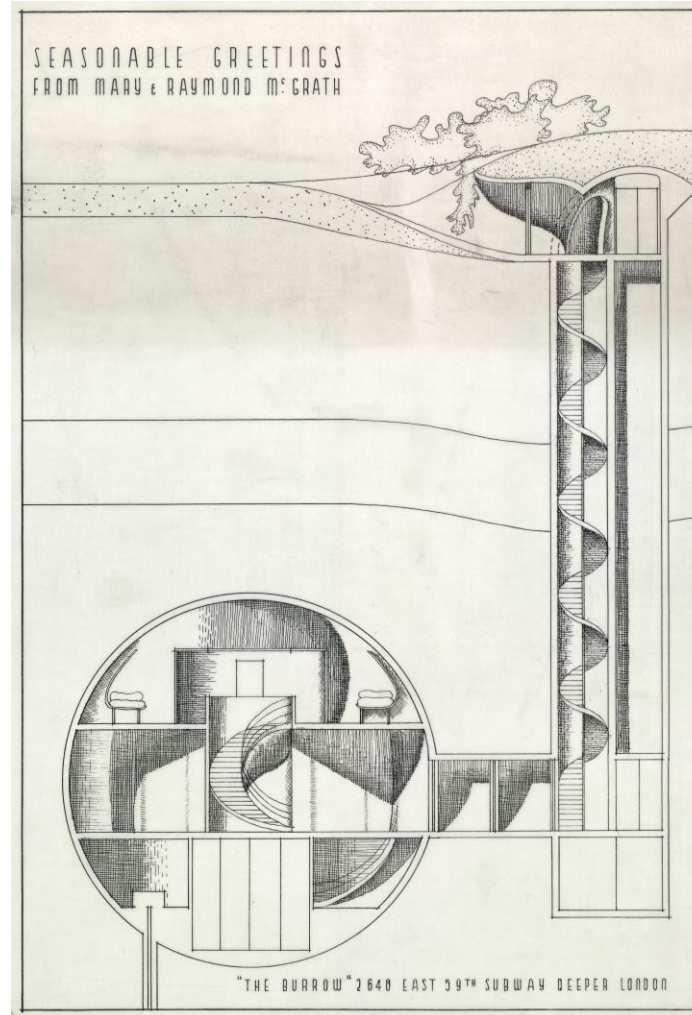
An abandoned Stanton Shelter, New Forest. By Jim Champion, CC BY-SA 2.0.

Explore

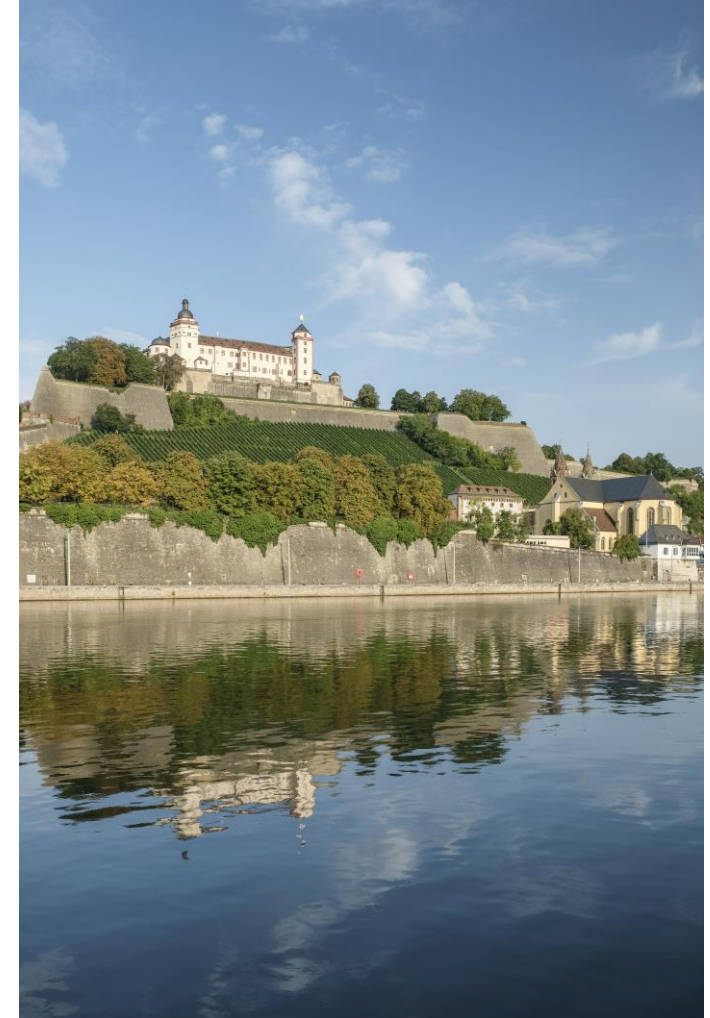
Defensive architecture design



Tower of London, built 1399. Ralph Deakin / RIBA Collections

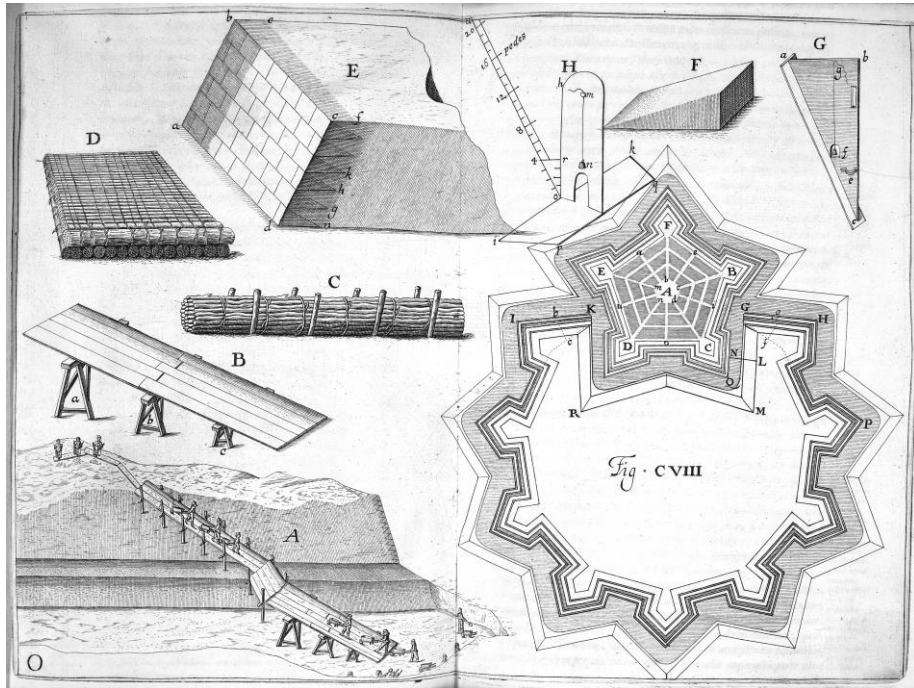


Design for a Christmas card showing a section through an underground house called 'The Burrow' by Raymond McGrath, 1930. RIBA Collections.



Marienberg Fortress, Würzburg, Germany. Founded in 1201 it was redesigned in 1708 in a Baroque style and the fortifications strengthened. David Valinsky / RIBA Collections

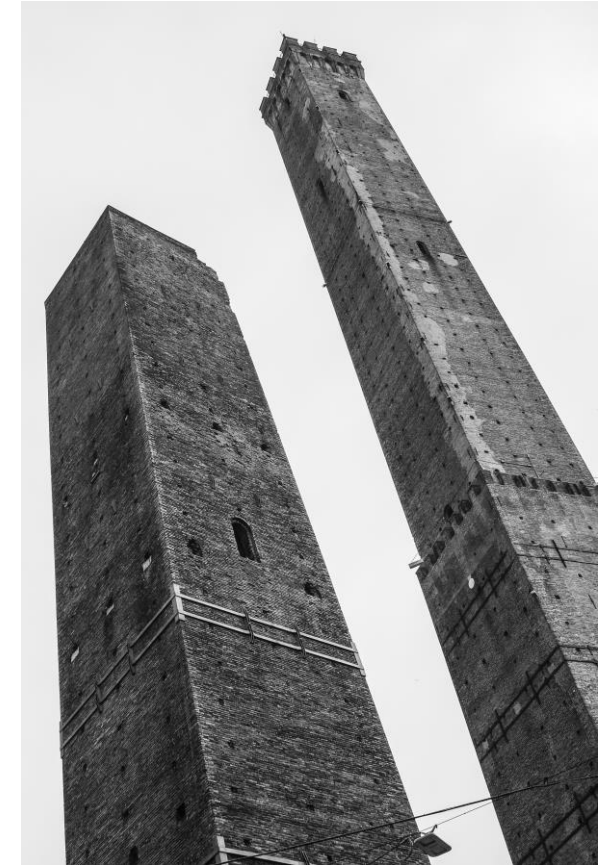
Explore Defensive architecture design



Tools and techniques used in building fortifications by Matthias Dogen, 1647. RIBA Collections.



Kropfenstein Castle., Switzerland, built most likely in C13th. By Adrian Michael CC BY 2.5.



Tower Garisenda and Tower Asinelli by Garisenda and Asinelli family, 1109 – 1119, Bologna, Italy. David Valinsky / RIBA Collections.

Explore Defensive architecture design



London Underground tunnel shelter by London Passenger Transport Board, 1942, London, England. Architectural Press Archive / RIBA Collections.



Air-raid shelter (Anderson shelter) in Tateyama, Japan, built during WW2. By Sapphire123, CC BY-SA 3.0



Design for a moated building guarded by a soldier by Erno Goldfinger, 1923. RIBA Collections.

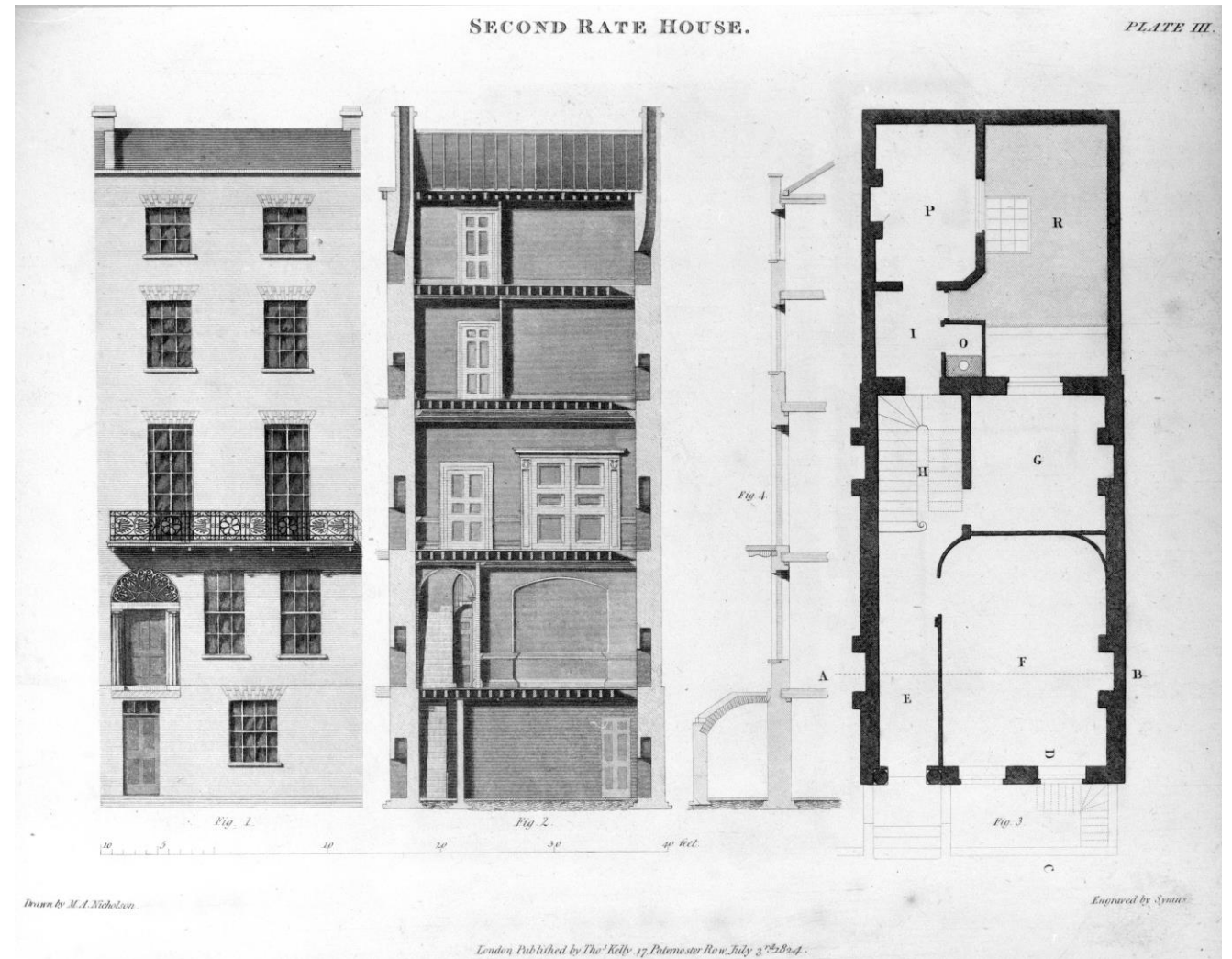
Explore How architects share ideas

- An architect is someone who designs buildings and spaces for clients.
- They usually show their ideas through three types of drawings; elevation, plan and section drawings.
- Using the definitions below, can you identify each type in the image to the right?

Elevation: A drawing which shows one of the exterior faces of a building

Section: A drawing which shows how the building would look if we sliced the front off and could see inside (imagine how a Victoria sponge cake would look if we cut a slice)

Plan: What a room or floor would look like if we took the roof off and looked down from the sky



Design

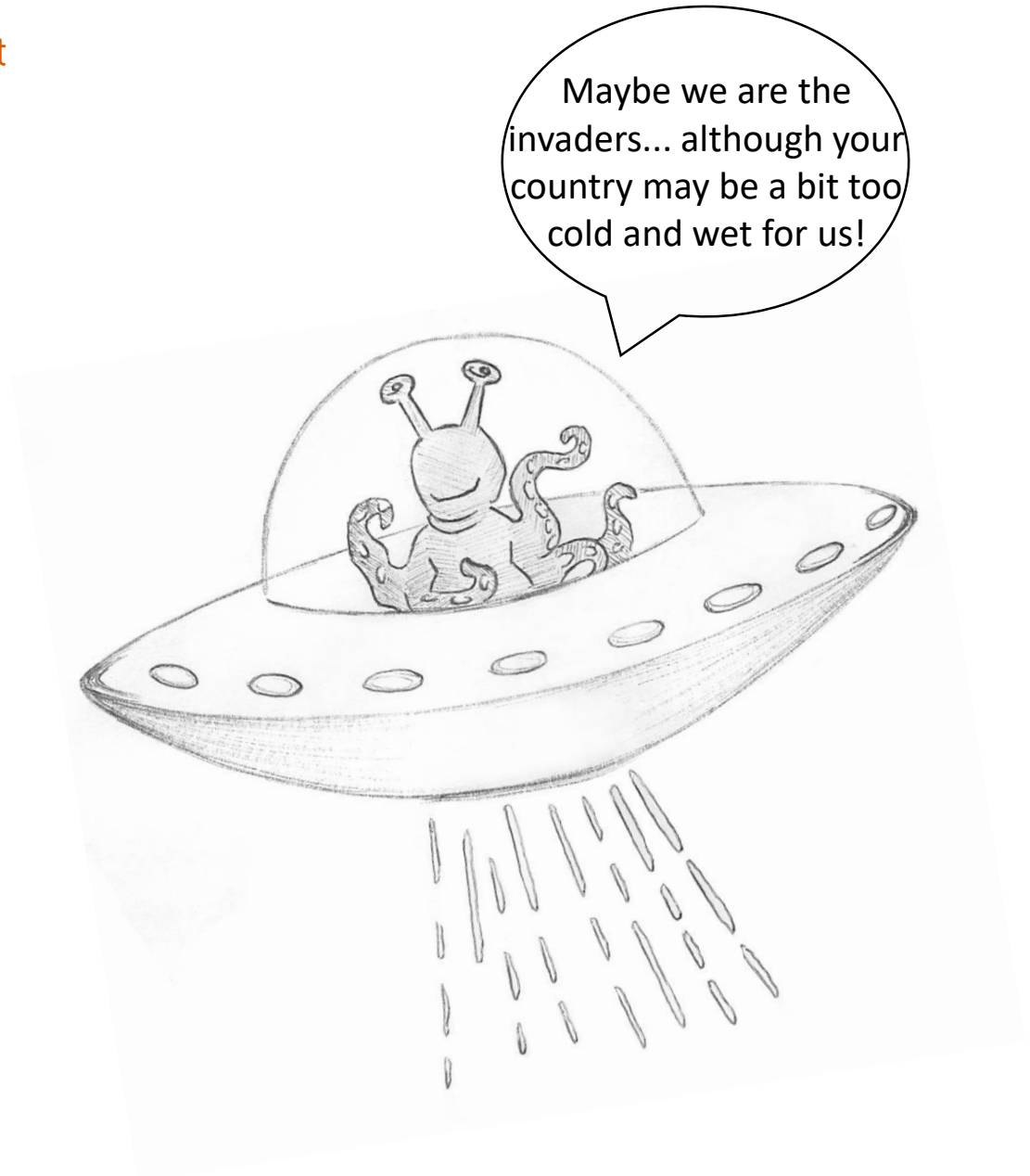
A safe house which meets the brief/challenge set

You now are ready to start the safe house challenge!

As we don't know who the invaders are, or what weapons they will have, you need to try and design a safe house which will protect against all the different types of invasion you have seen.

Remember;

- Your design must be hard to spot by enemies
- It must be strong, and hard to knock down or break into
- It must use sensible materials – for example no highly flammable materials!

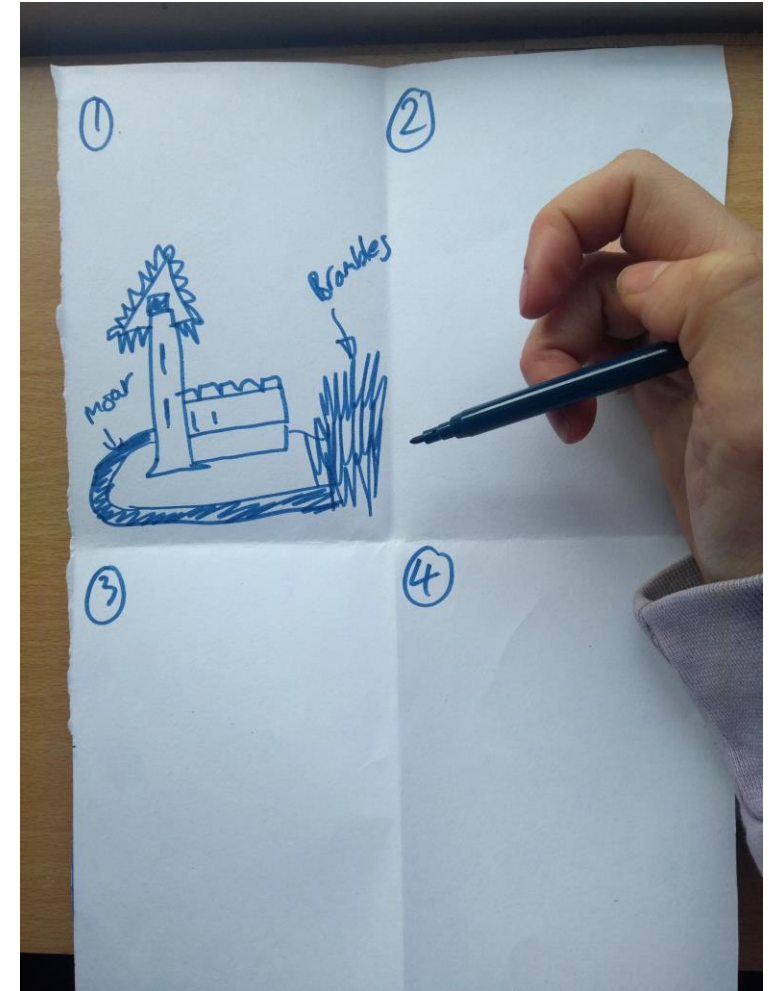


Design

Initial ideas and sketches, analysing them at the end

Before completing your final design, it is a good idea to draw some quick sketches so that you can try out different ideas.

1. Fold a piece of paper in half, and then in half again so you have 4 different rectangles to draw in
2. Draw a different idea in each of the spaces provided, spending no more than 5 minutes per drawing. They don't have to look perfect!
3. Look at your ideas and pick your favourite design or identify your favourite parts of each design. This should help you in the next stage.



Design

Your final idea in a section style, annotating your ideas

You now need to draw your final design. We would like you to do an elevation drawing of your best idea (you can choose which side you draw). Make sure you label what the key defence features are, and what materials they are made from.

Things to think about:

- What will be visible from the ground?
- Where will I locate the building?
- What materials will the different features be made of?
- How many entrances do I need?
- Is there a warning system or escape route in place?
- Will weather cause problems e.g. rain flooding rooms, snow blocking entrances?

Extension Activity

Can you make a section drawing, so we can see what it will look like inside your safe house? What types of rooms and spaces might the prime minister need? How will he move around inside the building?



Portchester Castle, AD 285-290 , England. Edwin Smith / RIBA Collections.

Make Your final idea using materials found in your house

Look at your drawing of your safe house. Think about the materials you can collect to use – is there anything in the recycling bin? Make sure it's clean!

How can you cut or join your materials to make the shapes you will need to make a 3D version of your safe house?

Start building!



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Copyright Rachel Manns Photography.



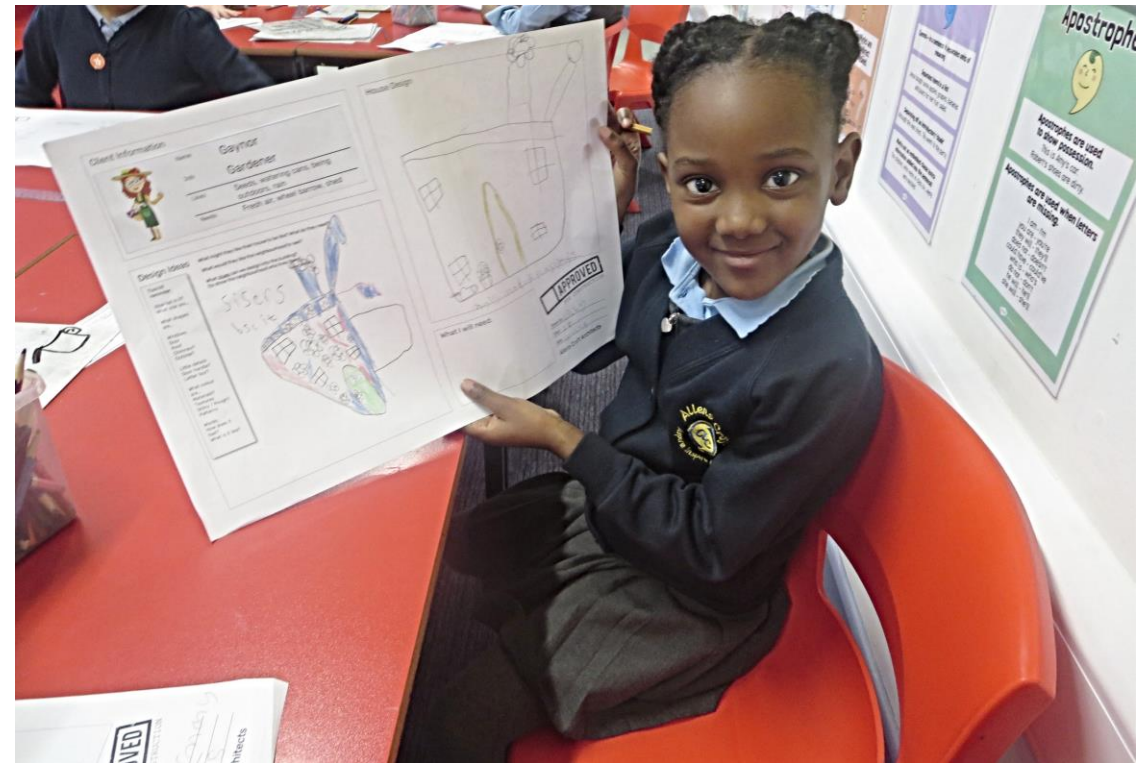
3D building ideas by RIBA Learning.

Evaluate What you have created

We now want you to tell us what you have designed and why, saying how well you think it has met the challenge. Why not explain it to a member of your family or ask them what they think?

Things to think about:

- 1) What have you designed, and what features have you included to meet the brief?
- 2) Did your idea change when you made it, why?
- 3) What are your favourite parts, why?
- 4) What would you like to change/improve? How would you change them?
- 5) How similar is your design to the buildings you researched?



Share What you have created

RIBA and our architect friends would love to see what you have made or drawn, as we are certain you will produce brilliant ideas that will make us smile!

If possible, please take pictures or scans of your designs/models and send them to us either via email (Learning@riba.org with the subject **Safe House**) or tag @ribalearning on twitter.

Good luck, and happy creating!



P.s. Keep an eye out for George our Learning Mascot... rumour has it he is starring in some drawing tutorial videos!