EDEXCEL

GCE Design and Technology: Product Design (A2) (Graphics Products)

EXEMPLAR MATERIAL 2

Title: 6th Form Block Design.

UNIT: 6GR04

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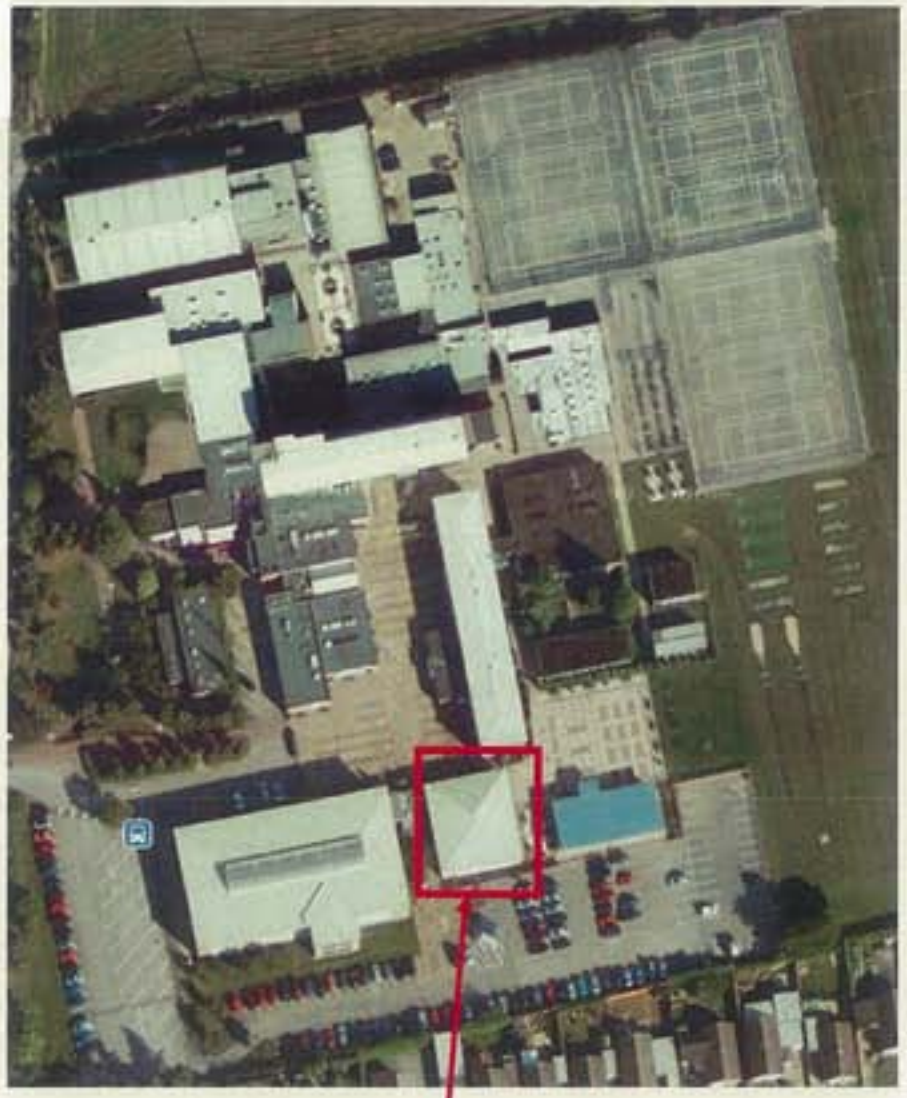
6TH FORM BLOCK DESIGN



This is where the 6th form block is located in the school. As it is shown, the area within the school designated solely for the 6th form is quite restricted and this will be a big limitation when designing.

USER GROUP

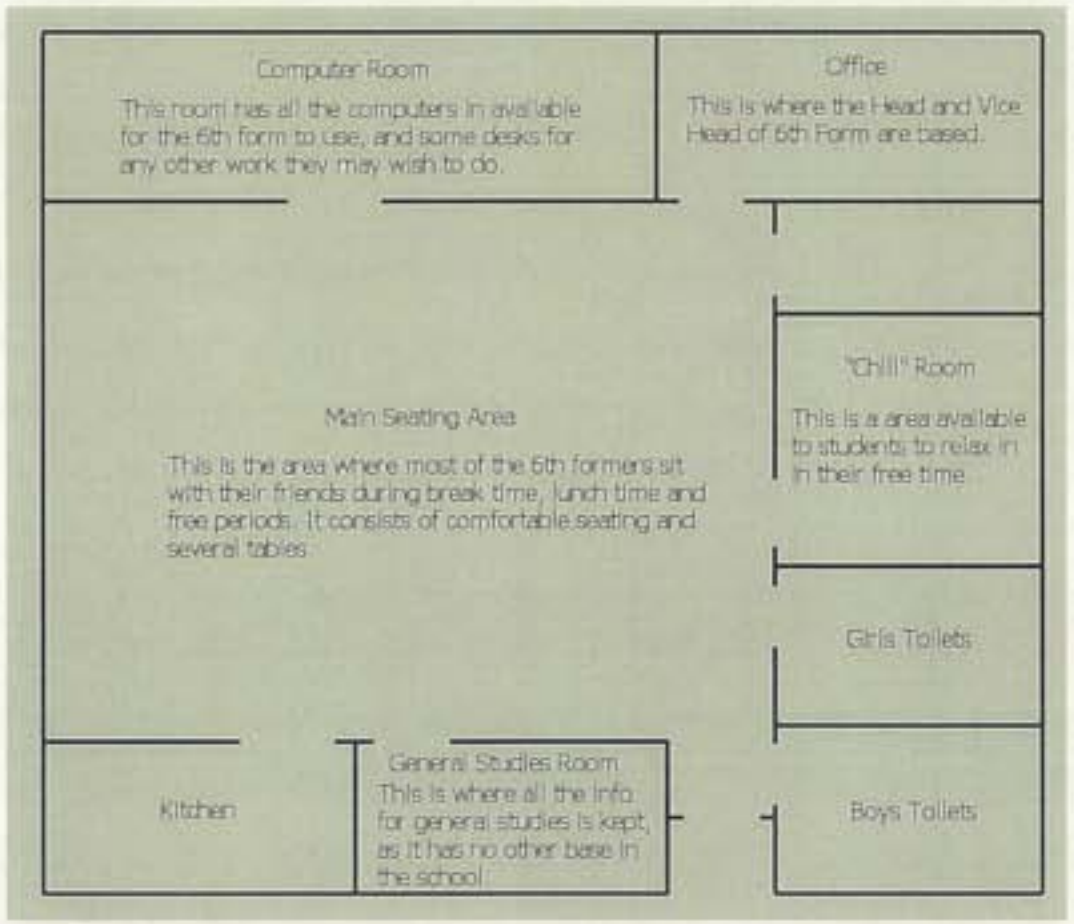
The group of people that the design will have to be done around will be year 12 and 13 students (aged 16-18) of all backgrounds and stereotypes. The design I come up with will have to cater to all of their needs and preferences as well as the schools.

BACKGROUND INFORMATION

The Sixth form Block at Branston Community College is extremely old; since it was built it has kept the same structural shape. A few times, it has had a lick of paint on the walls to brighten it up, and recently computers were added to one of the side rooms to modernise the quality of educating the centre provided. However, a revamp to this extent has never happened since it was built, so redesigning the building will be key to attracting more students to attend the 6th form rather than go to a more modern up to date place with better facilities such as Lincoln College.

DESIGN BRIEF

Design and make an accurate model of a sixth form block for Branston Community College. There is currently an existing block located in the school, and this is where the new one will be situated, however a complete revamp is wanted by the client, the current Head of Sixth, Ms Robins. This means that, apart from the size you have no limitations in what you can do with the designs for both the interior, and exterior of the building. Within this project, there must be an element of sustainability. The possibility of renewable energy sources being merged into the design must be open as a option and this will be key to the outcome of the final design. As part of the project, you must also design and make a presentation board to use with the model you will make as a proposal for your idea to the board of school governors and school council. It will need to sell the idea as the best one, and present the ideas in a clear and simple way.



CLIENT

My client is Ms Robins, who is currently the head of the Sixth Form at Branston Community College. Although there is going to be a total revamp of the block, and in the design itself I will have few limitations, I will have to abide by the needs and wants for the area I will create, for example what it needs to include.

6TH FORM BLOCK DESIGN - INTRODUCTION

In order to find out what I need to research, I need to analyse the problem that I have been presented with and ask all the questions that I need to find out the answers to in order to create an accurate, usable and good design. I have thought about it from three perspectives: the Head of Sixth Form, The Tutors of the Sixth Form and most importantly the Students.

Head of Sixth Form

What are the main functions of the sixth form block?
I will need to find this out to start my design off at all, as I need to know the main things I need to include and what is really important.
How many students will it need to cater for?
This is important for things like seating as it needs to have the capacity to hold the maximum amount of students so that it suits its need.
What are the requirements for your office?
This is important, as the head of sixth form will be spending nearly all her time there ad will need it to fit exactly to what she needs.
If any, how much storage space will be needed?
It is important to know how much will need to be stored, so that I can fit it into the design so that the final design doesn't come out with too much storage space and not enough space for everything else or not enough storage space so that things that need to be stored couldn't be.
How much space do the teachers need and will the teachers need their own facilities such as a kitchen or toilets?
If any, as the main use of the sixth form block is for the students, the other staff have the staff room so I need to know whether they need their own space in the sixth form block with facilities to use there as well.
What does the balance for students need to be between work and relaxing?
It is important to look at this form the head of sixth forms point of view as well as the students as obviously she is the one who needs to say how much they need to work, and I need to know to get the balance right between the areas I will create for relaxing and working.
What facilities will there need to be to present things to the entire year group during tutorial time?
I need to know this so that I can create an area, if needed, that suits this purpose and there can be a presentation to the whole of sixth form if need be.

Tutors/Teachers

Do you need a separate area?
It is important to know this as if they do it needs to be a major factor in my design.
What are your uses for the sixth form block?
If they do need an area, I need to find out exactly what needs to go into it by finding out what they do in it.
When do you use the sixth form block?
If there are only specific times like during lesson time or at lunch time that they use the sixth form block, I need to know so that they don't interfere with any of the activities student are doing.
What do you think is the most important aspect for the students?
It is important to get everyone's opinion on the use of the sixth form block for the students, as it will give a more comprehensive overview of what is needed and why.

Students

What kind of seating do they need?
It is important to know this to integrate it into my design, as there is no point having seats they don't need and not having seats they do need.
How many computers would be necessary?
This is important to know as the sixth form block needs to have the working capacity for all the students, so I need to know how many use the computers at any one time to work out how big the computer are needs to be.
How many lockers, if any, would be necessary?
To know how many people would need lockers.
What colours would be most suitable and would they most enjoy?
This is important to find out so that the design I create can be enjoyed by them and that they will like it.
What does the balance for students need to be between work and relaxing?
It is important to know how the students feel about this issue as well as the teachers as they will be the primary users of the block and it needs to be designed around what they mainly use it for, despite what the teachers want them to use it for, but never the less needs to put them in a working frame of mind.
What facilities need to be in the kitchen, if any?
To find out anything they think they may need from the kitchen, or if they even need a kitchen.
Does the work area need to be separate from the relax area?
I need to find out whether it can be one integrated area or whether they would find it easier to work in a separate environment to where people are working.
How many toilets do there need to be?
What materials would be most suitable and would they enjoy the most?
This is important to find out so that the design I create can be enjoyed by them and that they will like it.
Does it need to remain a single floor sixth form block, or are they open to more?

6TH FORM BLOCK DESIGN - ANALYSIS

Whilst planning my research for this project, I decided the best idea would be to conduct a questionnaire of 6th formers and carry out the rest of my research from there, as this seemed to be the best way to get what the target market wanted. By doing this, I could also find out what I needed to research. A questionnaire is also a very easy method of research for me as my user group is all my age so I have a lot of access to them.

Questionnaire

1. **What colours do you think would look best in the new 6th form block (Pick two)**

Black	Pink
White	Green
Blue	Cream
Grey	Gold
Red	Silver
Purple	

2. **What is the most important aspect of the 6th form block in your eyes?**

Teachers Office	Study Area
Kitchen	Recreational Facilities
Seating Area	Outdoor area
Computer Space	Toilets

3. **Should the colour scheme be:**

Bright and Colourful	Plain and Simple

4. **Which area in the 6th form block would you use the most?**

Kitchen	Seating Area
Study Area	Toilets
Computing Area	

5. **What sized group do you usually sit in in the 6th form block?**

1-3	9-11
4-6	12+
7-9	

6. **How many toilets would be suitable for the amount of people using them lin the 6th form bock? (separate cubicles)**

1	4
2	5
3	6+

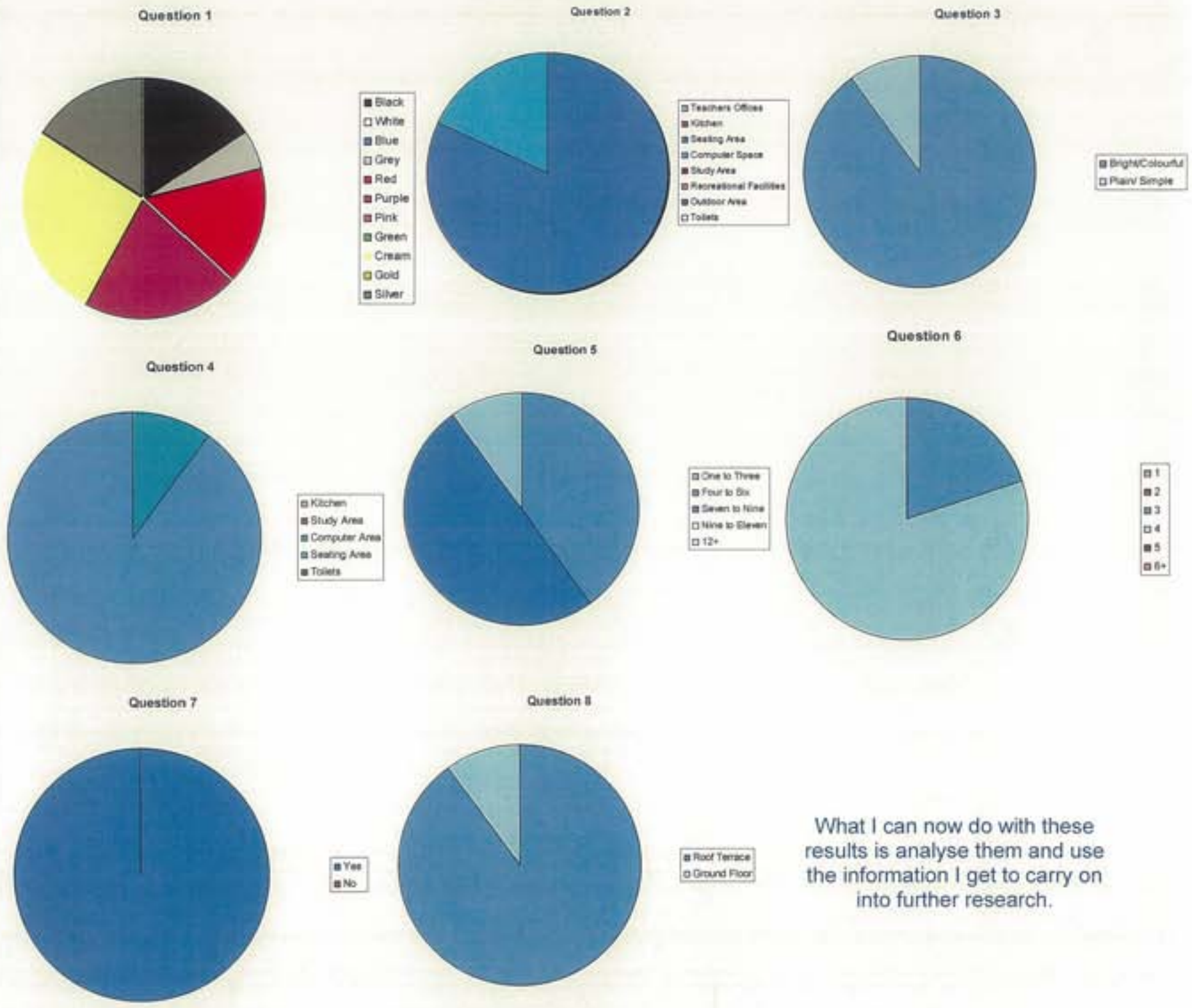
7. **Is an outdoor area an important part of the 6th form block?**

Yes	No

8. **If yes, does this outdoor area have to be situated in a ground floor area, or could something like a roof terrace be a possibility?**

Ground Floor	Roof Terrace

Result



What I can now do with these results is analyse them and use the information I get to carry on into further research.

6TH FORM BLOCK DESIGN - RESEARCH

CASE STUDY – EXSITING PRODUCTS

This is a brand new 6th form block designed by a collaboration of students and built in London. I think it would be useful to look at the project as a whole to see what aspects of the design are most important, because their project is exactly the same as mine, how ever I must take into account it is in a different setting, a central London 6th form block may be different to a rural Lincolnshire setting.

Because it has been designed by students, the 6th form block has a very modern feel about it, incorporating bright colours in a stylish yet practical way, and using detail to make it feel very contemporary. For instance, the stairway uses different shapes, materials and colours to convey a modern look. Glass is also a very important feature in this design in making it look and feel modern. It allows a lot of light in so the space feels big, open and airy. I also think the use of colour is interesting, as the main rooms seem to be generally pale, simple colours, all different bright colours are used together to add more interest to an otherwise boring locker room.

Because I think I am going to make my staircase a feature, I am particularly interested in this one. Clearly it is a feature in this 6th form block as well, with an interesting shape and lighting features above it all as one impressive feature. It makes the entrance to the 6th form block look very grand. The lights are also a major feature, being a very big, unique shape over the stairs. The large ceiling allows for this design, and maybe a high ceiling is something I should think about.

Something else I have noticed about the 6th form block is that it is very much split off into separate areas, rather than one big open space as my existing one is now. Obviously I need to take into account the students and clients wants when thinking about this option but, even though closed off separate areas work here I think maybe a more open space would work better.

Overall I really like the design of this sixth form centre, and I am looking to produce a design which is a long the same lines as this. It still has a feel very much for being a place for education, and is very official, but at the same time it is a well designed, well thought out, modern building with contemporary and stylish interior design to suit its purpose. My client, the head of the 6th form at the school that I am redesigning, very much likes this design, however in my design I have to add furniture and more detail to it.

What goes in a 6th form block?

Computer Space

In the questionnaire, the computer space was the only other area seen as important to the students however not quite as important as a seating area. The existing computer area had around 15-20 computers in it, yet this seemed to be the right amount as there were never any queues.
The main purpose of the area is to study, so the area has to be calm, relaxing and quiet with all the facilities needed readily available, such as computers, paper, desks, stationary etc.
Therefore I need to look at what types of these things there are available to best fit the need and space, and I need to figure out where is best to have this area, or if I should break it up depending on what people need it for.

Toilets

The toilets are a necessity in the 6th form block. After talking to 6th formers, they would much prefer to have toilets of their own which they can look after properly rather than share with the rest of the school. They need to be practical, and easy to keep clean. However since most school toilets tend to be dull I think it would be a good idea to add a bit of colour.

Recreational facilities

I need to find out what kind of things the 6th formers want as extras, such as the vending machines, and games such as the pool table o football table.
I realise that lockers are a must have as they were widely used in the existing 6th form block, and I need to find a suitable area for these to go, or an area of their own to go in. The size of the locker is also important here.

Study Area

Although not mentioned anywhere in the questionnaire as important, I have o take into account that as part of the 6th form block, the study area is an important area, even if not seen that way in a students eyes. The study area ties in with the computer space, so I need to look at how I could interlock these two ideas and create the best possible space. The study area needs to be a quiet, out of the way place with no distractions but also needs to be comfortable, as this is the most efficient way for a student to study.

Kitchen

The kitchen is an important area of the 6th form block, as it is used by a lot of the 6th formers to make their lunch. Therefore it needs some basic equipment such as a kettle, sink, fridge and microwave. There needs to be surface space for people to prepare food on such as pot noodles or microwavable ready meals. The kitchen could also be home to different vending machines to save cluttering up a different area of the 6th form block. From my experience, these machines are well used, and would be an important recreational feature in the area.

Teachers Offices

Most other teachers in the school have a classroom to be based in, however the head of 6th form does not, so her office needs to take up some of the space in the 6th form block. I have also noticed that during afternoon registration, where all the 6th form tutors gather together, there is no space for them to convene, so this would be a nice idea for them to have an area so everything is more organised. Obviously the office would need to be well equipped with a desk, chair, and plenty of storage to keep information organised.

Outdoor Area

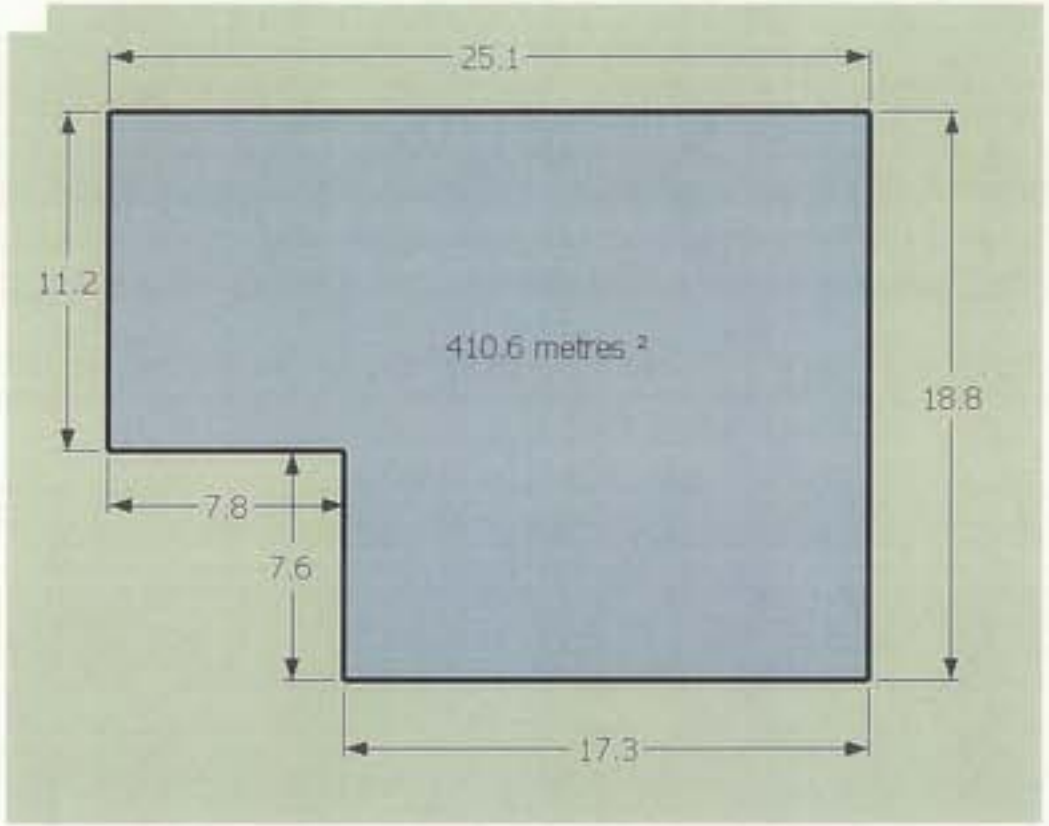
The out door area of the 6th form block is essential as every single student who I asked on the questionnaire said it was important. There are a lot of options as to how to design this, as it needs to involve a lot of different things. The main area is comfortable, practical seating. In the questionnaire, a lot of the answers said a roof terrace would be a good idea, where the 6th form could get away from the rest of the school .This could tie in with a sustainability idea, where the roof terrace or outdoor area could be home to a wind turbine or solar panel etc.

Seating Area

In the questionnaire, the seating area came out to be the most important part of the 6th form block, as well as the most used. These two ideas tie in together. Therefore the design of the seating are is important to get right.
The main purpose of the area is to sit and relax with friends, so their needs to be comfy chairs or sofa's available in reasonably sized groups. From the questionnaire I got that the most common group size was around 4-9 people, but I think a variety would be more fitting as there are lots of different sized friendship groups around. I also have found that tables or some sort of surface come very useful, so this is a key feature I need to look at. In the existing block, tables were also used as foot rests, so I think I need to look at somehow incorporating a footrest into a table so the tables stay clean.

6TH FORM BLOCK DESIGN - RESEARCH

ERGONOMICS AND ANTRHOPOMETRICS



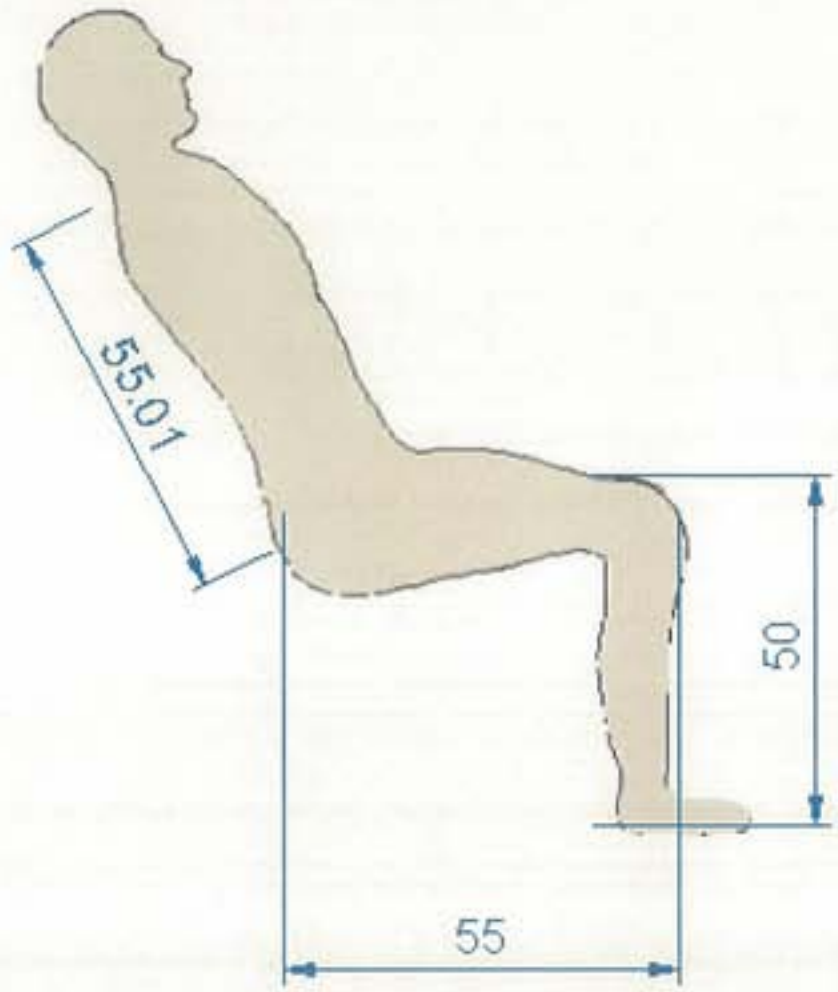
The area above is the only are currently available for all the 6th form facilities to be in, in the school grounds. As can be seen, the total the area covers 410.6 metres squared and is currently split as the building being in the main larger square on one level only, and the outdoor area for the 6th form being in the smaller rectangle sticking out to the right. As I am doing a complete remodel, these whole areas is made available for both the building and out door use, although I must take into account the surroundings as to how the space is used.

Surrounding the area is a car park to the rear, an IT centre to the right. A large, well used science and humanities block and to the front a large paved area for compulsory school students to use during break and lunch time. Since a roof garden/seating area seemed to be a well liked idea in the questionnaire, most of this space could be used as indoor space. There is also an option of building upwards instead of outwards and creating a second area. This way I could split the areas into more suitable sections, maybe a floor for teachers and students who want to work and a floor for those who want to relax, with recreation facilities in.

Sitting up working position

I have measured the dimensions of an average sized person sitting up and working at a desk so that when I design or choose the seating and working tables I can make sure they are the right size for working at comfortably with out straining the body. The seating position for working is very important, especially when sat at a computer because the seating position has to be correct so as not to strain any part of the body. As well as this the angle of the eyes to the computer screen is important so everything needs to be at the right height.

All of the measurements are in cm.



Sitting in a relaxed position

The relaxed seating position, in the case of many 6th formers is a slouched position. This is not very good for their back or their posture. Therefore I have decided that rather than have teachers tell them, I would make a chair that prevents slouching yet is still very comfortable and still makes you feel like you are sitting in a relaxed way (see body position of image to the left). Once again I took the different dimensions of an averaged sized person to make the perfect chair for relaxing in in between work times, after all this is a key time for a sixth former between lessons when they have been working hard and need some down time,

All of the measurements are in cm.

MATERIALS AND COLOURS

Wood
There are several advantages to using wood in a sixth form block. If it is a soft wood, it can be quite cheap as it is quite available, and it can be varnished to be waterproof and for easy cleaning. As well as this there are many different types of wood that can create a theme throughout the building, go with other materials well and can set the tone of a room. Man made woods such as **MDF** and **Plywood** can be laminated with thin sheets of wood to reduce the cost even more, and still come out with the same finish, but maybe even stronger and will hold screws, nail and glue better as they do not warp like natural woods.

Plastic
There are many different kinds of plastics that could be used to come in different colours to suit the colour scheme of the room and is useful for furniture such as tables and chairs where I don't want too much money to be put into. The downside to plastic is that it can look quite tacky if not used tastefully and in the right way, and can me marked and scratched easily depending on what it is.

Metal
I am reluctant to use metal in my design, as it is expensive, and loos very industrial, however once again used in the right way and in moderate amounts could look contemporary and modern. The colours and properties of different types of metal give a wide variety of what could be used, depending on what it is needed for. It needs to be easy to clean, quite strong and go well with the colour scheme.

Other
Other materials, such as fabrics like cotton and leather need to be looked at for furniture like sofas and chairs for their properties such as easy cleaning, variety of colours, durability and water resistance.
Other materials such as glass will play a big part in my design, obviously for windows and maybe in many other aspects as it is a contemporary material and can make things looks quite modern and fancy. Obviously with glass come safety issues that need to be addressed as it can be smashes easily, although you can get smash resistant glass.

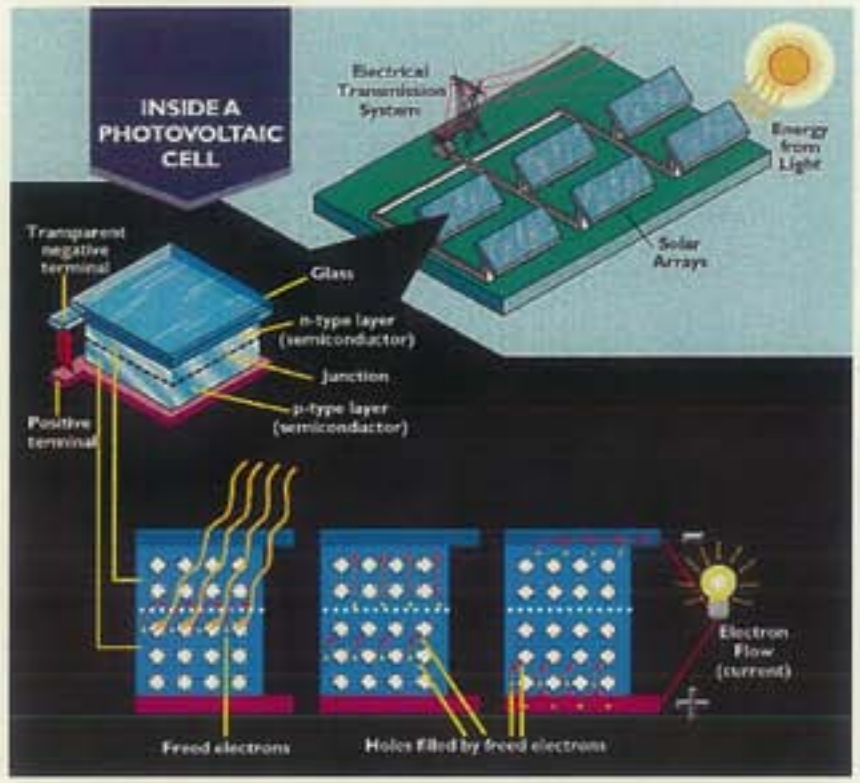
Material	Type	Advantages	Disadvantages	Decision
Maple	Wood	Good colour, light, fairly strong, moderate priced, nice grain pattern.	Prone to warping.	I think this is the wood to use because of its colour.
Pine	Soft Wood	Straight grained, fairly strong, easy to work, cost effective, readily available, golden orangey colour, quite light.	Knotty and quite a harsh orange colour which might not go with as many colour schemes.	I don't think it would be good for the sixth form block because of its colour.
Mahogany	Hard Wood	Easy to work, fairly strong, durable, available in big sizes, medium weight.	Has difficult interlocking grain and is prone to warping. Also has a very dark colour which may darken the room if used a lot.	I don't think it would be good for the sixth form block because of its colour.
Oak	Hard Wood	Strong, durable, tough, hard, finishes well, has a nice light-ish colour too it (the European kind).	Contains corrosive acid, very heavy, any fittings leave a blue stain on the wood, and it is very expensive.	The fact that it is heavy and expensive is one thing, but I don't think it is suitable because the colour is slightly too dark.
Acrylic (Polymethyl methacrylate)	Plastic	Stiff, hard, durable, safe it food, good chemical resistance, machines well, colours well, polishes well.	Scratches easily, difficult to join.	I think this is a good option to use as it is durable and comes in a lot of colours.
uPVC (Polyvinyl chloride)	Plastic	Weather resistance, stiff, hard, tough, lightweight, wide colour range, flexible.	Needs to be stabilised for out door use.	I think this is a good option to use as it has only advantages as I only need it for indoor use.
ABS (Acrylonitrile butadienestyrene)	Plastic	High impact strength and toughness, scratch resistant, light, durable, high quality surface finish.		I think this is a good option to use as it has only advantages.
Stainless Steel	Metal	Hard, though, resist wear and corrosion, quite malleable if in the right form. Good colour.	Shows greasy marks easily, difficult to cut or file.	I think this might be an option to use for the colour and the properties apart from the marks it shows easily.
Aluminium	Metal	Good strength to weight ratio, light, soft, ductile, non toxic, corrosion resistant, good colour, polishes well.	Difficult to join, annealing necessary.	I think, if metal is used at all, this would be the one to use as it ha the right colour, is relatively cheap and has good properties.

SUSTAINABILITY

I have decided as well as trying to use more sustainable resources I want to add something extra into the building to make it that much more eco-friendly and self sufficient, so as well as looking at different possibilities of how to do the interior I am going to look at some different ways of powering the 6th form block without using conventional power.

PHOTOVOLTAIC CELLS

A photovoltaic cell is a type of Photoelectric cell that uses the photovoltaic effect to generate electrical energy using the potential difference that arises between materials when the surface of the cell is exposed to radiation.
This, on top of the sixth form block could produce a fair amount of the energy needed to run the centre using sunlight as the source of radiation. The sun is a sustainable, renewable source of energy so would help a long way in making the building sustainable. I think it is a very good idea as, although they have complicated systems they are a lot more descrete than soemthing such as a wind turbine, they are flat, and could easily be integrated as part of a roof garden which seemed to be a popular idea in the questionaire.



MINI WIND TURBINE

Small wind turbines are wind turbines which have lower energy output than large commercial wind turbines, such as those found in wind farms. These turbines may be as small as a fifty watt generator for boat or caravan use. It works by converting the kinetic energy from the wind rotating the blades, into mechanical energy and using that to make electricity. This electricity could then be used like any other to supply a building,
This would make it very suitable for the kind of thing I am looking for as although it may not produce all of it it could produce some of the energy for the 6th form block. However there are some downsides, the wind turbine would only produce electricity on windy days where as the photovoltaic cell produces using any kind of light. Therefore on very mild none windy days the block will have to rely compeltely on the normal power input. Aswell as this, wind turbines are not as discreet and they stick right out and look quite ugly, as well as making a lot of noise.

SUSTANABLE MATERIALS

Most kinds of wood are sustainable. Man made woods however such as MDF or plywood take a lot of processing and this is not sustainable. The cutting down of trees for wood is not sustainable either. However there is a new scheme in place where for every tree cut down 3 more have to be planted to replace it, to save the rainforests and wooded areas around the world. The finishing that would be needed for wood is also harmful to the environment. However wood is recyclable and this is very sustainable.

All plastics, including thermo plastics are not very sustainable. They require a lot to chemicals and processing the produce them and this is harmful to the environment. Thermo plastics can be reformed into different shapes and are therefore in a way recyclable but not without difficulty, as reprocessing them can also be harmful to the environment.

I am going to interview my client, Ms Robins the head of sixth form to see what the most important aspects of the design are. I am then going to use this, and the rest of my research to form a specification for the design of my sixth form block that I can make sure it is as good a possible and what people want.

CLIENT INTERVIEW

What are the most important aspects of the 6th form block to you?
The study area is a very important part of the 6th form block because after all that's what 6th form is about. It needs to be comfortable but a space where it is easy to work and have some peace and quiet. An out door area is also very important for the students to have that is separated from the rest of the school for in summer when it is warm and they want to be outside.

How much space do you think the 6th form block needs?
Considering the design of it now, although there is enough space the 6th form is expanding and it would be nice to have enough space to do this. I think extra space from what there is now is essential, and maybe a second floor is a good way of doing this as it would keep within the restraints in terms of the space allotted for the 6th form in the school.

In my design of the 6th form block, what should I include that the current 6th form block does not have?
I think how the 6th form block looks is just as important as its functions. It needs to reflect that the 6th form at Branston Community College is a modern place to learn and attract potential students. Creating a modern space will make it a nicer place to be and lighten the atmosphere. Also, it hasn't been updated in a long time so it will make a big difference.

Do you think I should try and work in the idea of sustainability into my design and if so how?
I think the 6th form block should be made as sustainable as possible, as helping the environment is a very big issue in the present day. Making it sustainable would save the school precious money on keeping it up. Your idea of alternative sustainable power sources such as solar panels is good. This will also attract the attention of a lot of other people around the county and maybe a good way of attracting new students. It would make the redesign of the 6th form block even more innovative.

Is there anything else you would like to give your opinion on?
I think the students voice needs to be heard in terms of the design as after all thy will have to use it and may well have the best ideas. As well as this health and safety must be thought about for legal reasons. Regulations must be met for instance the number of toilets and the kitchen area.

SPECIFICATION

Form
- The 6th form block must fit into the space allocated into the school and cannot be any bigger because there is no other room around the area allocated, therefore there is no room for expansion.
- The 6th form block must have enough space for around 200 students plus space for 6 members of staff to register and 2 members of staff to have as a base.
- The 6th form block must look modern. With this it must use a modern colour scheme that's young and contemporary with modern materials that go as well. This is so the 6th form block will be attractive to its target market.
- The 6th form block must feel light and airy, not dark and dingy. There must be plenty of natural in the room so as to cut down on the need for electrically powered lighting so that it is more sustainable.
- The 6th for block must have two floors for more space, to allow the 6th form population of students to expand and so that it is a bit more comfortable. My client also suggested that this should be a must in the design. There must be good access, with double space for plenty of room.
- The 6th form block must have a feature in it, so that as well as a working 6th form block it looks like an innovative, modern space.

Function
- The 6th form block must include a separate study area and relaxing/social area so that people who are trying to work do not get distracted and can get some quiet, because that is the point of 6th form.
- The 6th form block must also include a kitchen area, toilets, lockers, offices, an outdoor area and a storage facility as this is what was found from the research.
- The second floor of the 6th form block must be at a height where it leaves plenty of room underneath so that it does not feel too closed in.

User Requirements
- Although the 6th from block must look good, it also must look predominantly like a work place as that is its main purpose. It has to look relaxing, but to the parents of prospective students it must look like place that they will get lots of work done with the correct facilities rather than just a socialising area.
- The 6th form block must be safe and follow health and safety regulations. It must also follow any other regulations in terms of school facilities such as numbers of doors, windows and toilets.
- The 6th for block must have two floors for more space, to allow the 6th form population of students to expand and so that it is a bit more comfortable. My client also suggested that this should be a must in the design. There must be good access, with double space for plenty of room.

Cost
- The design must ensure that the 6th form block will be fairly cost effective to produce as the school is running off a tight government budget and cannot afford to spend a lot on things it doesn't need such as excessive decoration.

Sustainability
- The 6th form block must have an alternative sustainable power source as part of it to provide some of the power needed to run it, because this is important in the present day and therefore should be included. As well as this the materials used should try to be sustainable.
- The 6th form block must feel light and airy, not dark and dingy. There must be plenty of natural in the room so as to cut down on the need for electrically powered lighting so that it is more sustainable.
- The Sixth form block must use sustainable materials that can be re used or recycled in a clean way and will save on using new resources.

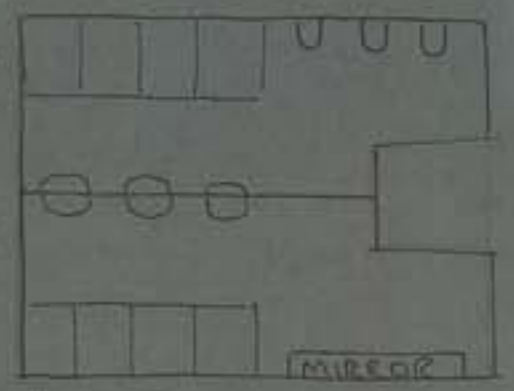
Technical
- The second floor of the 6th form block must be at a height where it leaves plenty of room underneath so that it does not feel too closed in.
- The structure of the building must be sound and viable so that it is safe, and the second floor must hold up

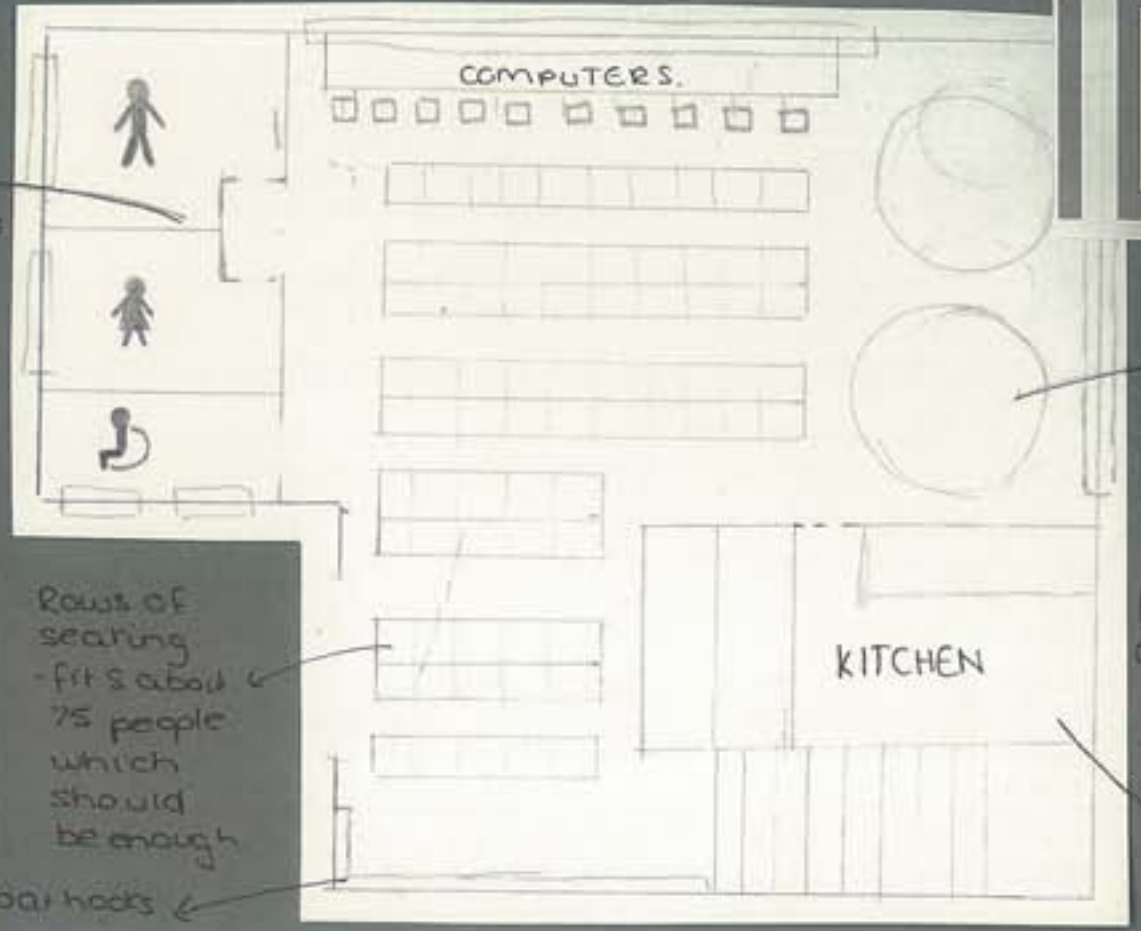
6TH FORM BLOCK DESIGN - CLIENT INTERVIEW AND SPECIFICATION

IDEA ONE

wall creates a more private entrance for both toilets, and provides space for a notice board where every one will see it

This is the plan for the toilets. They are identical other than the boys has urinals where the girls has mirrors.

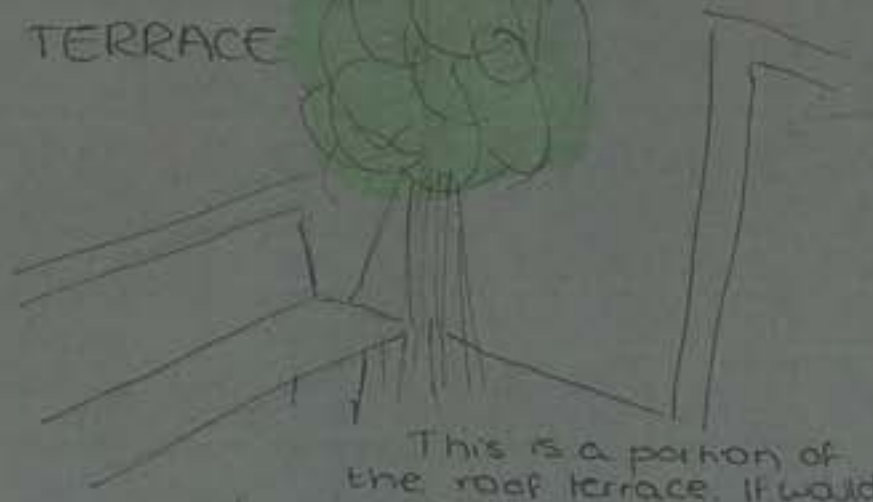




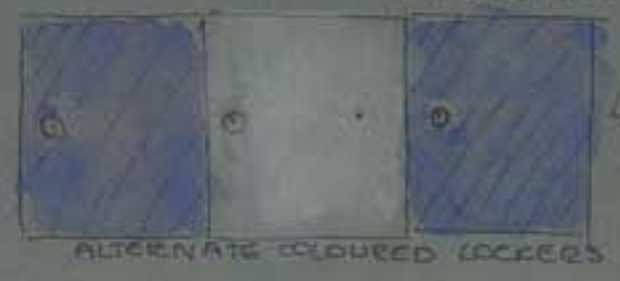
Rows of seating - fits about 75 people which should be enough

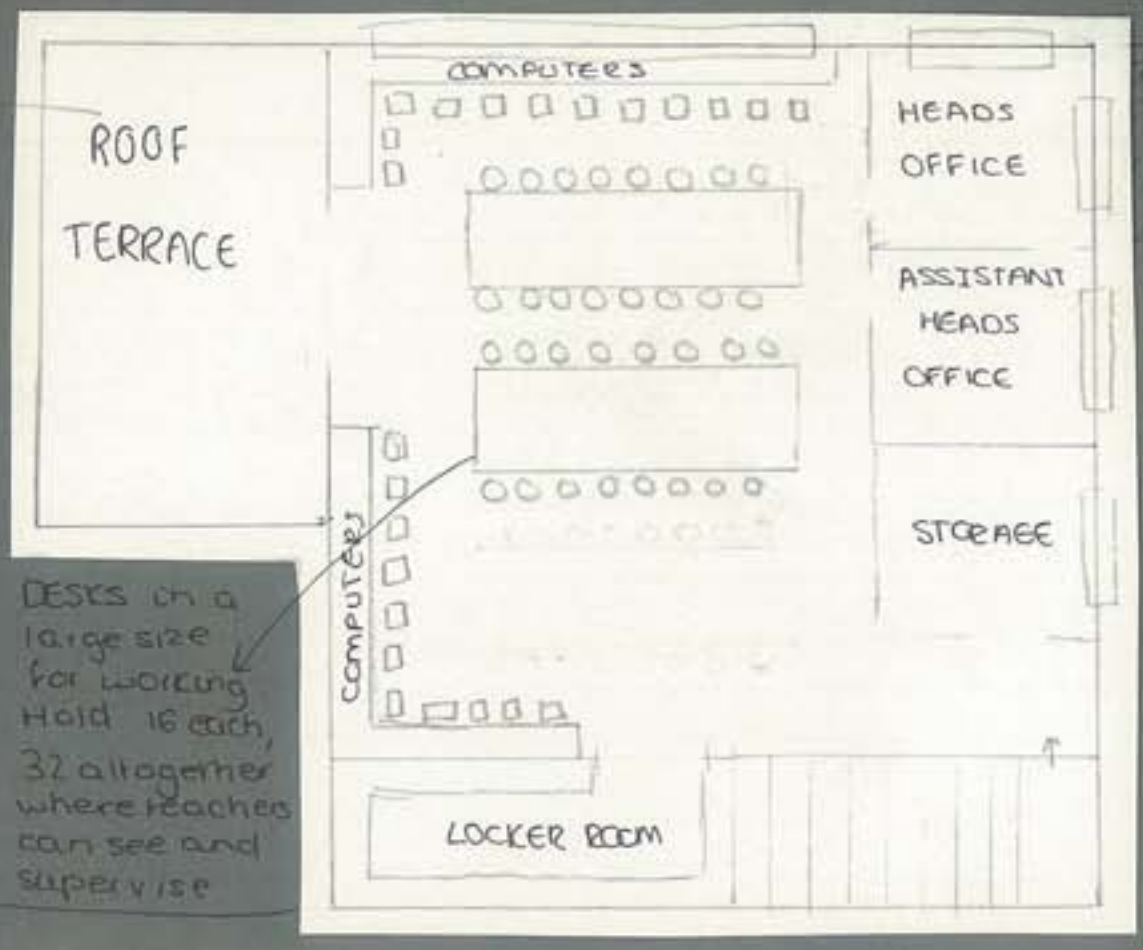
coat hooks

ROOF TERRACE



This is a portion of the roof terrace. It would have half a wall steel barrier for safety round the cage and benches and trees to make it look nice





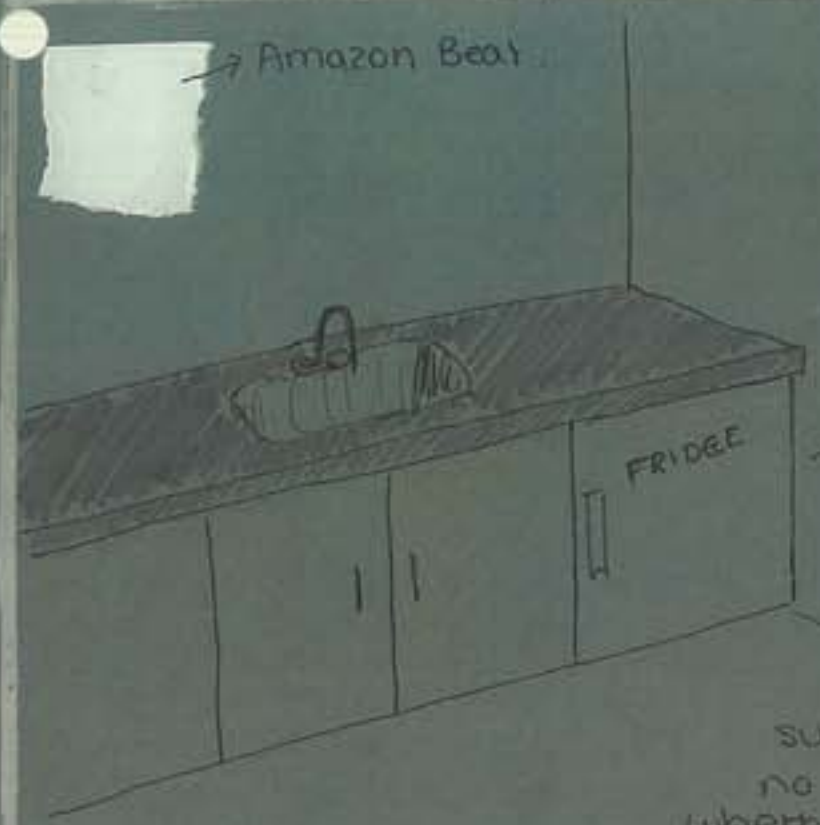
DESKS in a large size for working. Hold 16 each, 32 altogether where teaches can see and supervise

EVALUATION – AGAINST SPECIFICATION

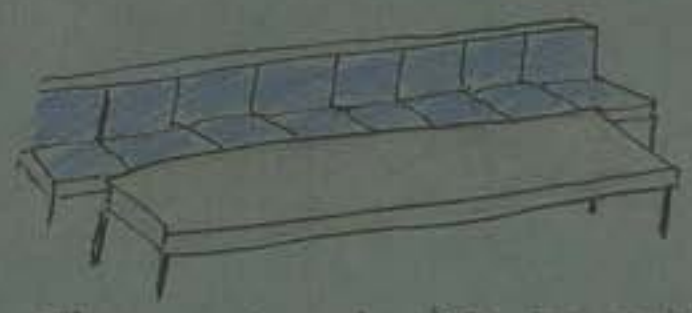
- **The 6th form block must fit into the space allocated into the school and cannot be any bigger.** It fits into the space allocated by the school.
- **The 6th form block must have enough space for around 200 students plus space for 6 members of staff to register and 2 members of staff to have as a base.** There is plenty of space, but actually far too much. All the separate places defined are there, for instance there is even a specific place for registering, which is good.
- **The 6th form block must look modern. With this it must use a modern colour scheme that's young and contemporary with modern materials that go as well.** The design isn't old, but it isn't exactly modern. There is nothing about it that sticks out as modern, however using the right colours and materials could change that.
- **The 6th form block must feel light and airy, not dark and dingy. There must be plenty of natural in the room.** There are some big windows in this design, but it is still very full especially with two full floors, so I think this might make it feel closed in and boxy.
- **The 6th for block must have two floors for more space, to allow the 6th form population of students to expand and so that it is a bit more comfortable.** It has two full separate defined floors.
- **The 6th form block must have a feature in it.** The round sofa booths are a bit like a feature, but there is still nothing that is one big main feature.
- **The 6th form block must include a separate study area and relaxing/social area.** The areas are on different floors, which separates them well..
- **The 6th form block must also include a kitchen area, toilets, lockers, offices, an outdoor area and a storage facility.** It has everything required.
- **The second floor of the 6th form block must be at a height where it leaves plenty of room underneath.** Yes, although it may feel closed in/
- **Although the 6th from block must look good, it also must look predominantly like a work place as that is its main purpose.** The work area is upstairs, and you enter into the relaxing area, so there is a balance but the first floor feels very much like a work area.
- **The 6th form block must have an alternative sustainable power source as part of it to provide some of the power needed to run it. As well as this the materials used should try to be sustainable.** Although the design doesn't directly include any sustainable detail, there is plenty of potential for sustainable materials to be used for all the different components and an opportunity for solar panels on the flat roof. However there is a lot of things in the design that maybe are not needed, which is therefore waste and therefore unsustainable.

6TH FORM BLOCK DESIGN - DE

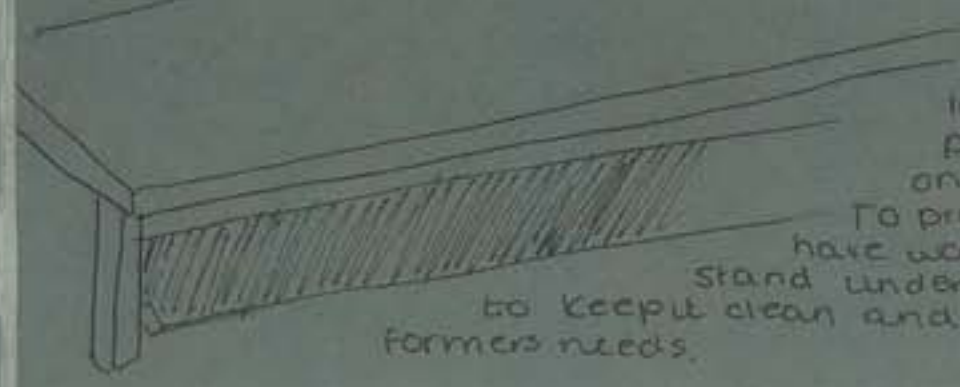
IDEA TWO



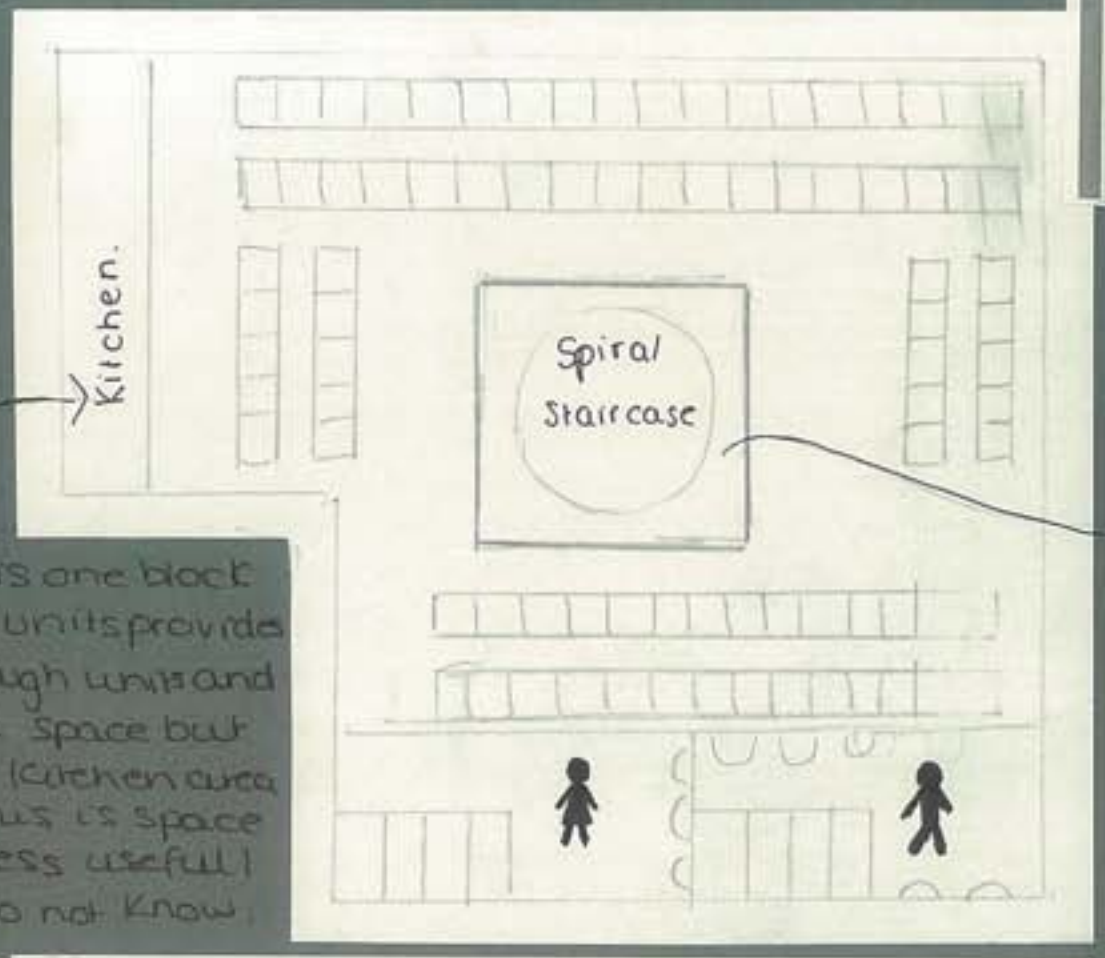
This one block of units provide enough units and surface space but no real kitchen area whether this is space creating or less useful I do not know.

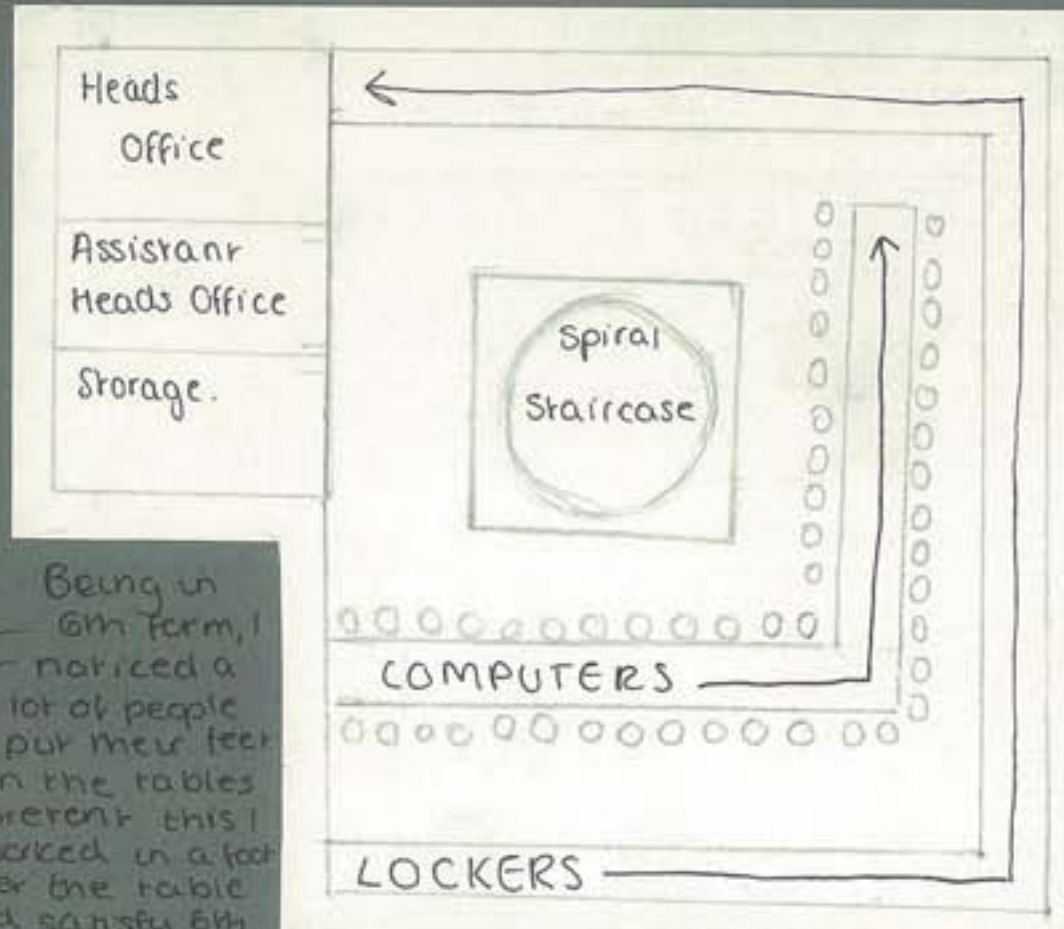


The chairs will be opposite each other with tables in between to allow easier socialising and the table can be used for food at lunch time or any other objects it may be needed for.



Being in 6th form, I noticed a lot of people put their feet on the tables. To prevent this I have worked in a foot stand under the table to keep it clean and satisfy 6th formers needs.



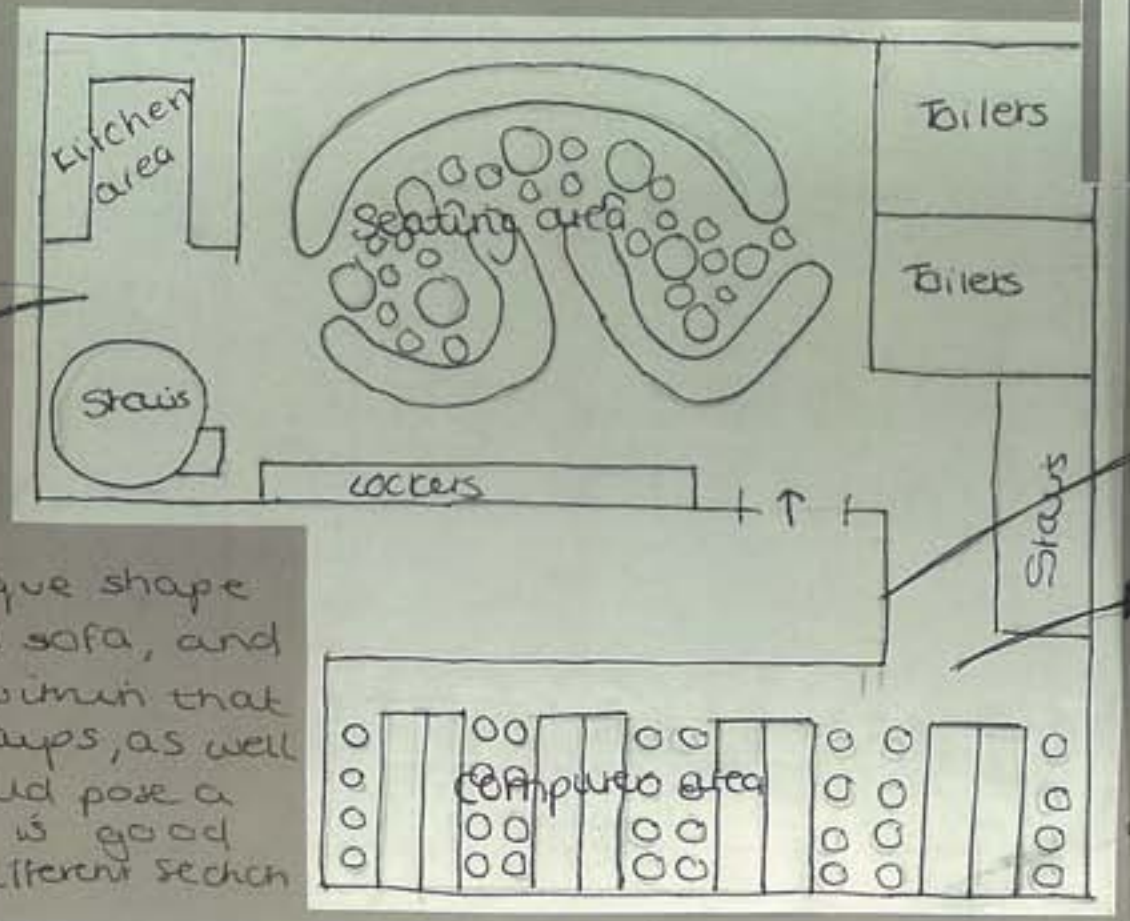


EVALUATION – AGAINST SPECIFICATION

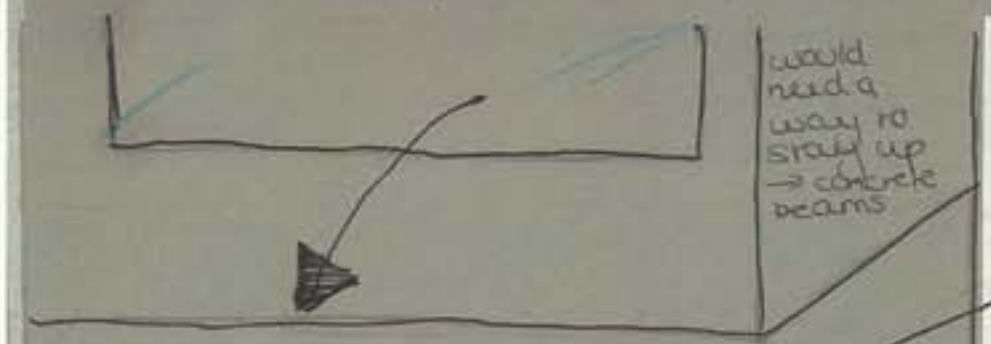
- **The 6th form block must fit into the space allocated into the school and cannot be any bigger.** It fits into the space allocated by the school.
- **The 6th form block must have enough space for around 200 students plus space for 6 members of staff to register and 2 members of staff to have as a base.** There is a very good balance of space here, there is not too much but not too little.
- **The 6th form block must look modern. With this it must use a modern colour scheme that's young and contemporary with modern materials that go as well.** The design isn't old, but it isn't exactly modern. The glass and metal stairs look very modern, and using the right colours and materials through out the rest of the design will ensure it looks modern.
- **The 6th form block must feel light and airy, not dark and dingy. There must be plenty of natural in the room.** There are some big windows in this design, but it is still very full especially with two full floors, so I think this might make it feel closed in and boxy.
- **The 6th for block must have two floors for more space, to allow the 6th form population of students to expand and so that it is a bit more comfortable.** It has two full separate defined floors.
- **The 6th form block must have a feature in it.** The stair case in the centre of the room, spiralling upwards is a feature, and a very good one I think.
- **The 6th form block must include a separate study area and relaxing/social area.** The areas are on different floors, which separate them well.
- **The 6th form block must also include a kitchen area, toilets, lockers, offices, an outdoor area and a storage facility.** The sixth form block design does not have an outdoor area included in it which is a big problem.
- **The second floor of the 6th form block must be at a height where it leaves plenty of room underneath.** Yes, although it may feel closed in.
- **Although the 6th from block must look good, it also must look predominantly like a work place as that is its main purpose.** The work area is upstairs, and you enter into the relaxing area, so there is a balance but the first floor feels very much like a work area.
- **The 6th form block must have an alternative sustainable power source as part of it to provide some of the power needed to run it. As well as this the materials used should try to be sustainable.** Although the design doesn't directly include any sustainable detail, there is plenty of potential for sustainable materials to be used for all the different components and an opportunity for solar panels on the flat roof. The design itself is not wasteful, it only includes things that are needed which is a good thing for sustainability.

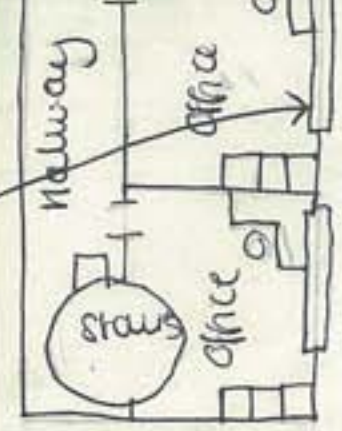
6TH FORM BLOCK DESIGN - D

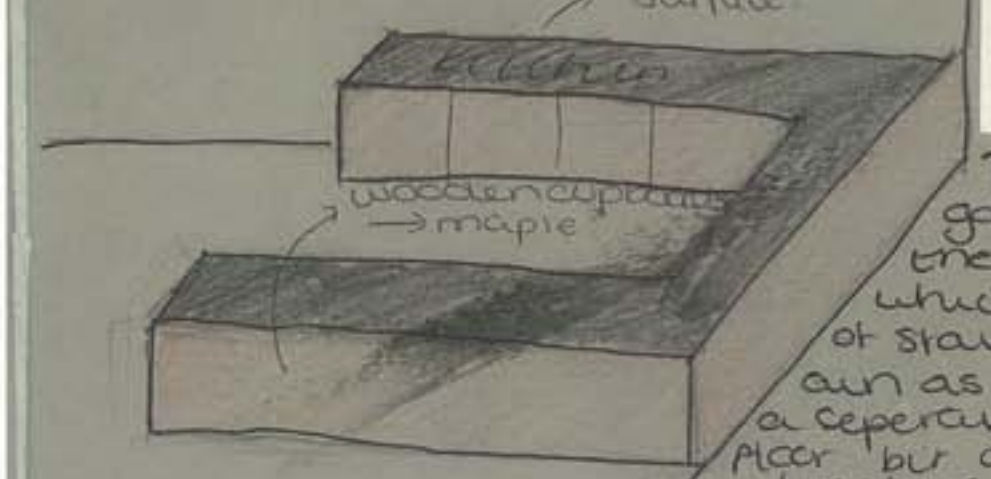
IDEA THREE



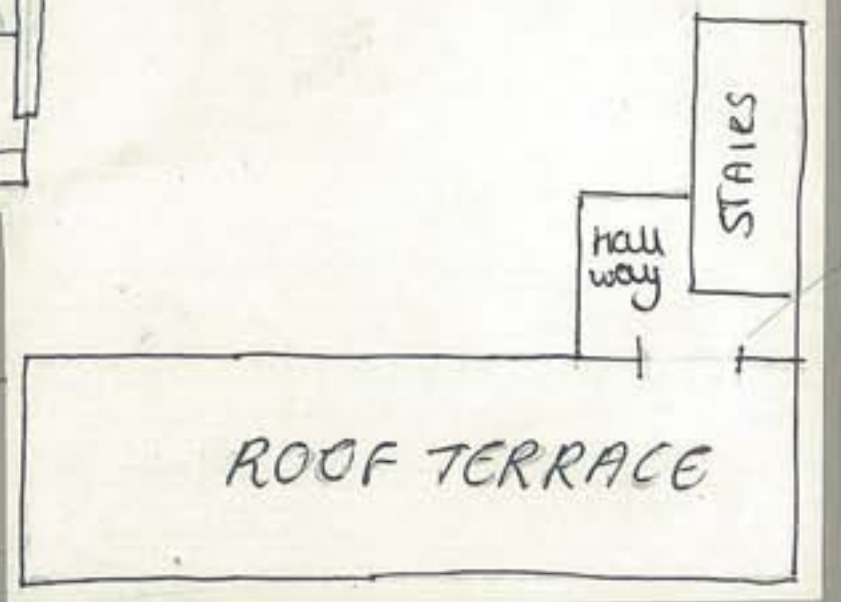
This seating area is quite a unique shape in that there is one long curved sofa, and 2 more curved ones that fit within that to cater for different sized groups, as well as chairs scattered around. It could pose a problem for moving around, but is good because it splits the area into different sections







The kitchen goes below the offices which have a set of stairs of their own as they are on a seperate second floor bit of their own. The teachers can watch over the seating area to keep an eye out

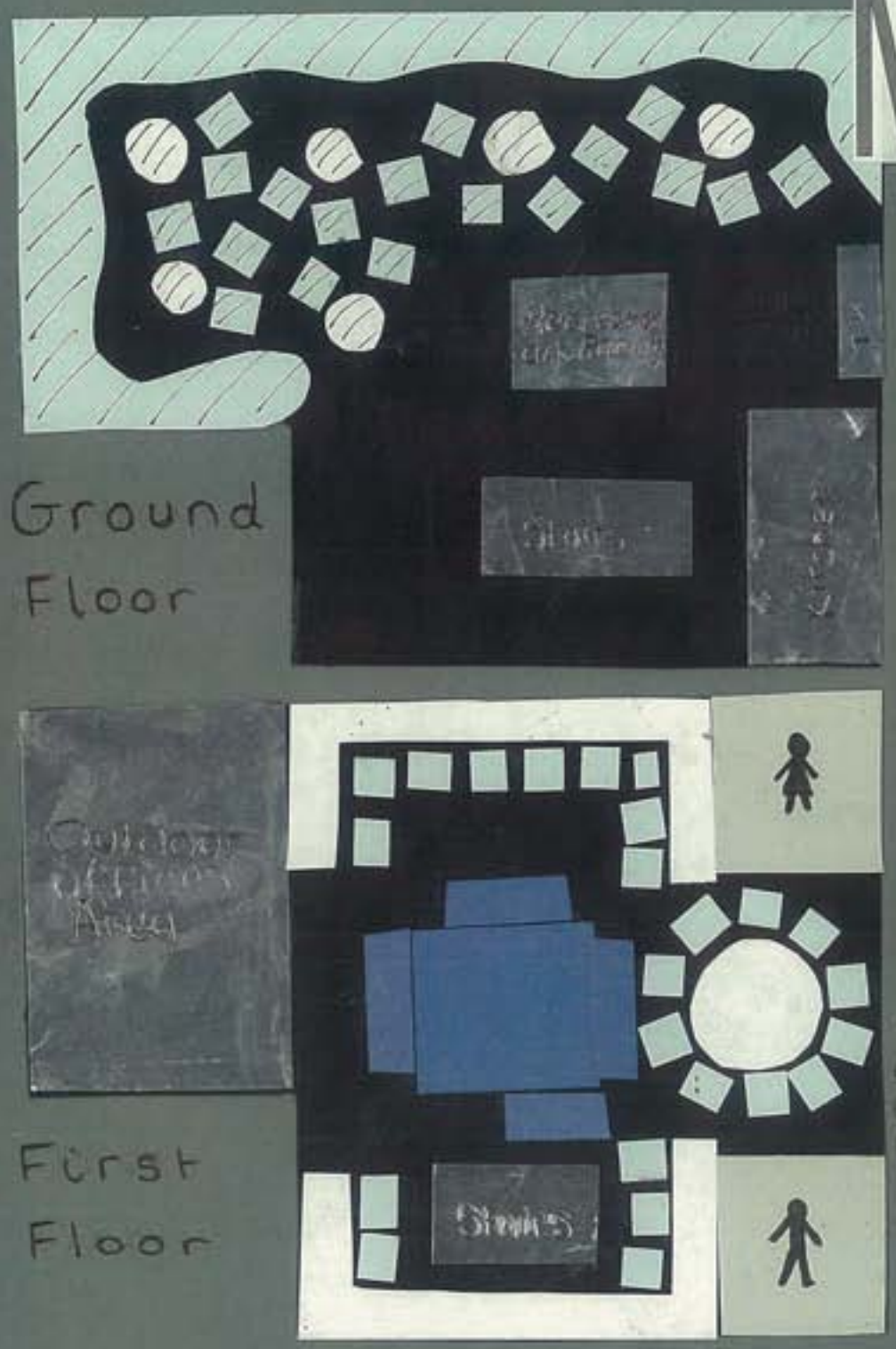


EVALUATION – AGAINST SPECIFICATION

- **The 6th form block must fit into the space allocated into the school and cannot be any bigger.** It fits into the space allocated by the school.
- **The 6th form block must have enough space for around 200 students plus space for 6 members of staff to register and 2 members of staff to have as a base.** There is space for all the students bearing in mind some of them will be relaxing, some of them will be working at any one time. There are offices for the head and deputy head of sixth form, but no real space for teachers to do their registers.
- **The 6th form block must look modern. With this it must use a modern colour scheme that's young and contemporary with modern materials that go as well.** This is quite a modern design, with the mezzanine floor offices and roof terrace, however there isn't anything that sticks out particularly as very modern.
- **The 6th form block must feel light and airy, not dark and dingy. There must be plenty of natural in the room.** Due to the mezzanine office level, there will be a lot of light as the walls are 2 storeys big enabling large windows to be put in for natural light.
- **The 6th for block must have two floors for more space, to allow the 6th form population of students to expand and so that it is a bit more comfortable.** This design is good in that it has all the space needed, but does not waste space in that it only has the bits of the second floor that are needed to create room, and does not waste money and light creating space that is not needed.
- **The 6th form block must have a feature in it.** It has no feature.
- **The 6th form block must include a separate study area and relaxing/social area.** The areas are separate but not by walls or doors, which keeps it open, perfect.
- **The 6th form block must also include a kitchen area, toilets, lockers, offices, an outdoor area and a storage facility.** No storage facility.
- **The second floor of the 6th form block must be at a height where it leaves plenty of room underneath.** It does – helped by mezzanine level.
- **Although the 6th from block must look good, it also must look predominantly like a work place as that is its main purpose.** The work area is hidden, and you enter into the relaxing area, so there is a balance but the work area feels very much like a work area.
- **The 6th form block must have an alternative sustainable power source as part of it to provide some of the power needed to run it. As well as this the materials used should try to be sustainable.** Although the design doesn't directly include any sustainable detail, there is plenty of potential for sustainable materials to be used for all the different components and an opportunity for solar panels on the flat roof. As well as this it is sustainable in that there is not wasted space and the fact that it allows for so much natural light will cut on electricity usage.

6TH FORM BLOCK DESIGN - DE

MODELLING



On the ground floor of the design there is a much more relaxed seating area than the other designs. The shape of the sofas will look nice in a curved way and the individual seats will allow for more space and better conversation. The advantage of modelling meant I could rearrange every thing into a good position. Unfortunately the outdoor area is near the work area which would not work.

CLIENT OPINION

Like the amorphous shape of the relaxing seats but it doesn't work on a 6th form block. First floor also more functional.

This design is a lot more practical than some of the others. The outdoor area is a bigger and in the area not near the area. There is a normal seats a lot of study seat is a lot of office space and a large left but can hold a lot of people for big rushes at break or at lunch.

CLIENT OPINIO

The lift is not a good Again it is not prac and is way too expe for a 6th form block

EVALUATION – AGAINST SPECIFICATION

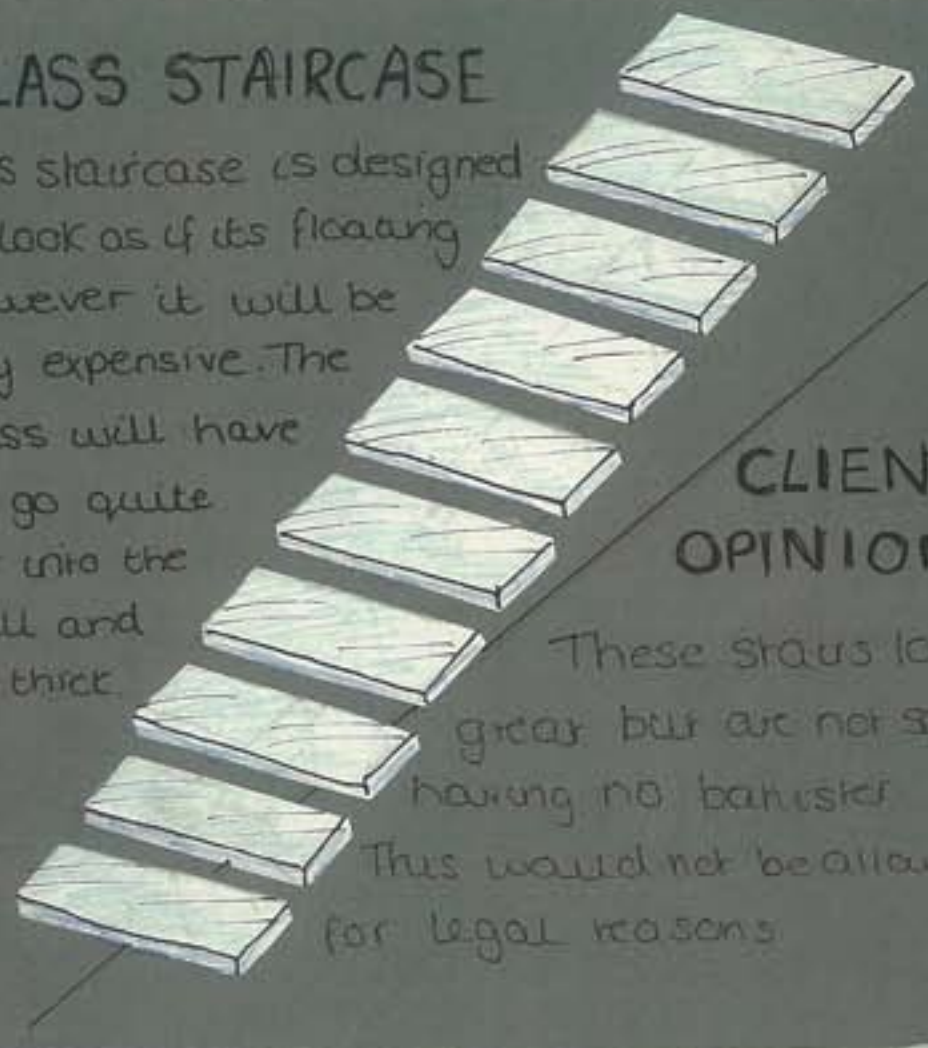
Design on the LEFT

- **The 6th form block must fit into the space allocated into the school and cannot be any bigger.** It fits into the space allocated by the school.
- **The 6th form block must have enough space for around 200 students plus space for 6 members of staff to register and 2 members of staff to have as a base.** There is enough space providing that students spread out between the work area and the relaxing area.
- **The 6th form block must look modern. With this it must use a modern colour scheme that's young and contemporary with modern materials that go as well.** The curvy seating around the relaxing area is a very modern, unique design and so is the big, circular study table on the top floor.
- **The 6th form block must feel light and airy, not dark and dingy. There must be plenty of natural in the room.** There are plenty of windows included in this design, and quite lot of space for the students to move around in, which makes it feel light and airy, but not quite like the design with the mezzanine floor.
- **The 6th for block must have two floors for more space, to allow the 6th form population of students to expand and so that it is a bit more comfortable.** It has two full separate defined floors.
- **The 6th form block must have a feature in it. The sixth form block does not have a feature in it at all.**
- **The 6th form block must include a separate study area and relaxing/social area.** The areas are on different floors, which separate them well.
- **The 6th form block must also include a kitchen area, toilets, lockers, offices, an outdoor area and a storage facility.** The sixth form block design does not have a storage area included in it which is a big problem in a lot of the designs, is it really needed?
- **The second floor of the 6th form block must be at a height where it leaves plenty of room underneath.** Yes, although it may feel closed in.
- **Although the 6th from block must look good, it also must look predominantly like a work place as that is its main purpose.** The work area is upstairs, and you enter into the relaxing area, so there is a balance but the first floor feels very much like a work area.
- **The 6th form block must have an alternative sustainable power source as part of it to provide some of the power needed to run it. As well as this the materials used should try to be sustainable.** Although the design doesn't directly include any sustainable detail, there is plenty of potential for sustainable materials to be used for all the different components and an opportunity for solar panels on the flat roof. The design itself is not wasteful; it only includes things that are needed which are a good thing for sustainability.

6TH FORM BLOCK DESIGN - DESIGN IDEAS

STAIRCASE

GLASS STAIRCASE



This staircase is designed to look as if its floating however it will be very expensive. The glass will have to go quite far into the wall and be thick.

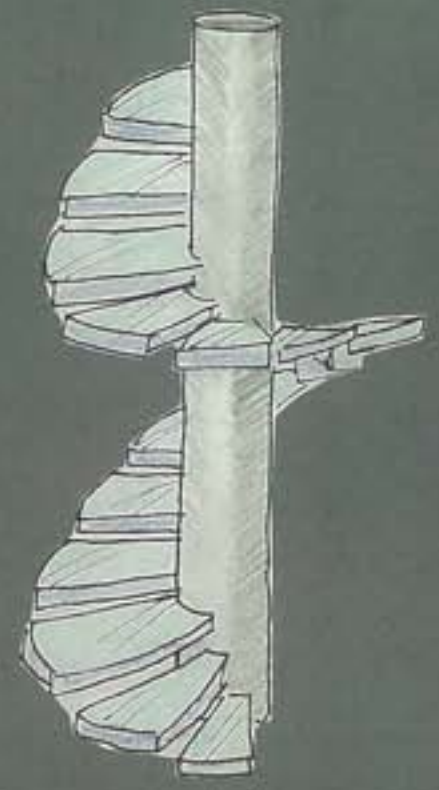
CLIENT OPINION

These stairs look great but are not safe having no banister. This would not be allowed for legal reasons.

LIFTS/ELEVATORS

These lifts are very modern. I like the idea of glass on both. On the right, I like how the lift is on the outside of the building, on the style of. This would be a space creating option. Glass and metal looks very modern which is exactly what I want.

SPIRAL STAIRCASE

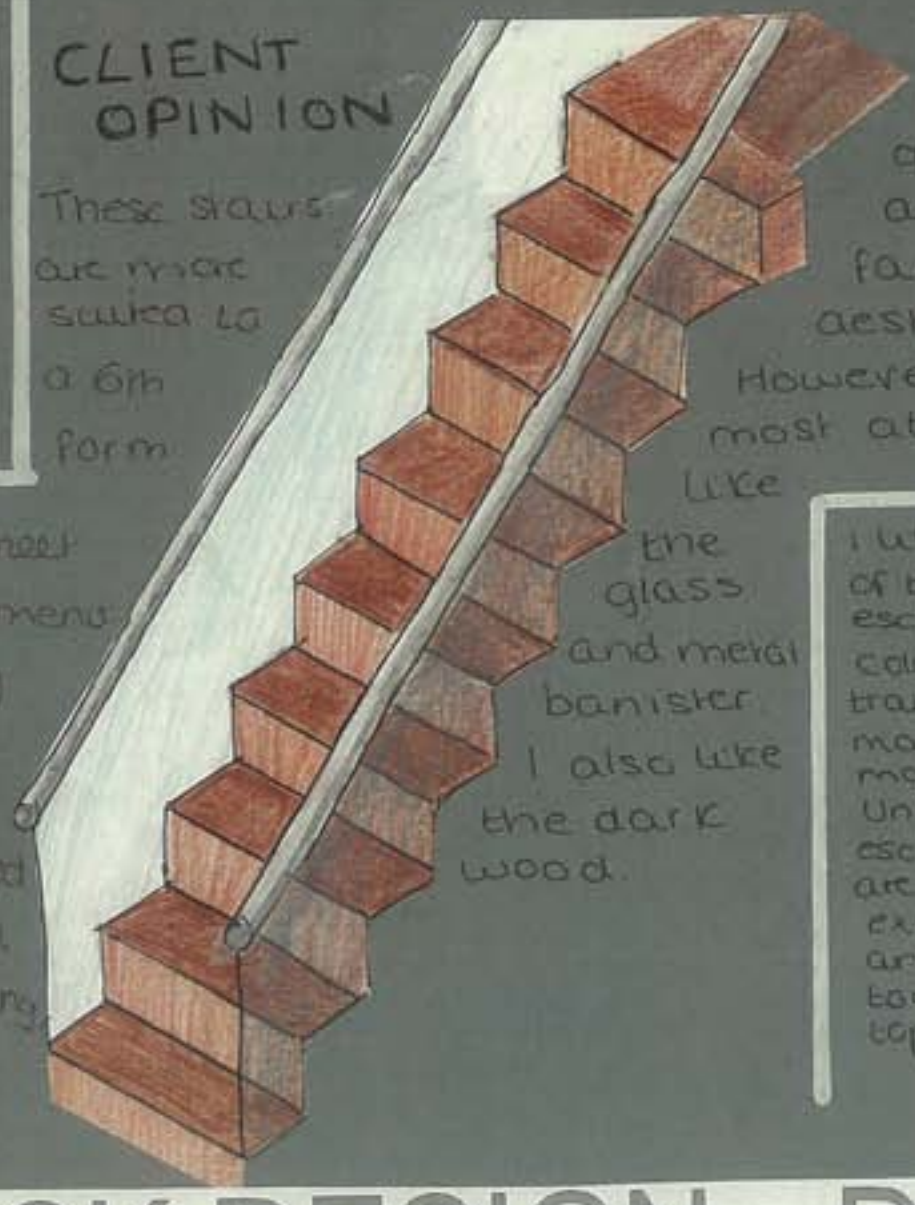


The spiral staircase looks great and saves a lot of space however would be very awkward for people (a lot of) trying to go up and down at the same time.

WOODEN STAIRCASE WITH GLASS BANISTER

CLIENT OPINION

These stairs are more suited to a 6th form block. They meet legal requirements however they look a bit boring and normal - need to be a bit more interesting a feature.



This staircase is practical quite cheap and it looks fairly good aesthetically. However its not the most attractive I do like the glass and metal banister. I also like the dark wood.

ESCALATOR

This escalator allows for colours to be used which would be great for the 6thr form block. It looks modern and contemporary. The downside is 2 would be needed, one for up and one for down and this would take up far too much space.

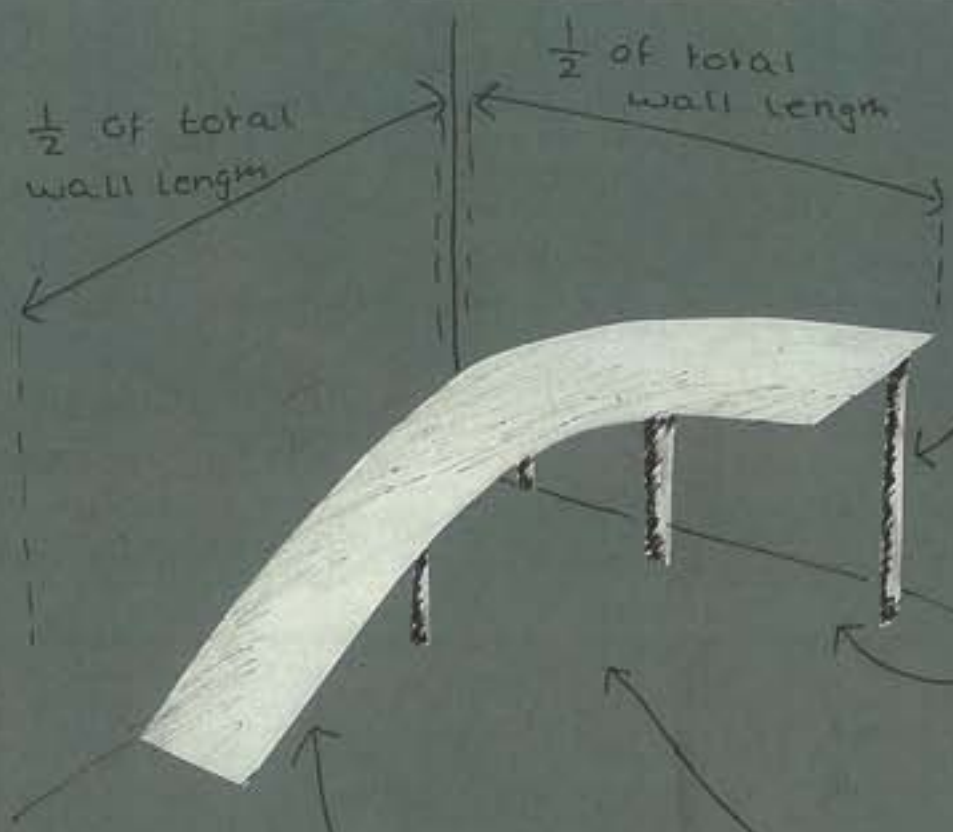
I like the sides of this escalator. The colour and translucence makes it look modern. Unfortunately escalators are very expensive and may be too over the top.

ESCALATOR

6TH FORM BLOCK DESIGN - DESIGN IDEAS

STAIRCASEDEVELOPMENT

ecause I liked the spiral staircase
ut the client did not think it was
racheal, I am going to look at
ifferent ways of curving the stairs



Because the underneath the stairs are just poles to support the stairs, there is space for something to fit under it. I think it would be the perfect place to put the kitchen units as they will fit nicely, or the lockers.

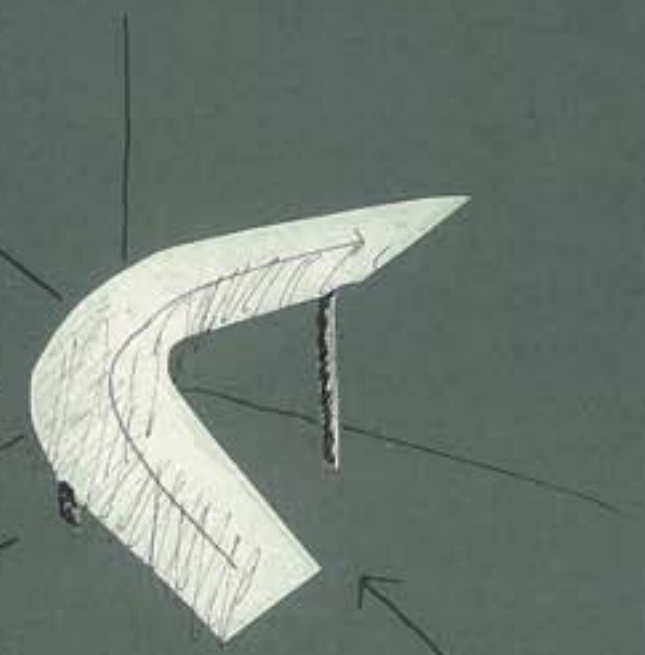
Alternatively this space could be shut off and used as storage.

Rounded to the shape of the room. Goes smoothly round the corner

The stairs would have to be quite wide so people could fit up and down them at the same time

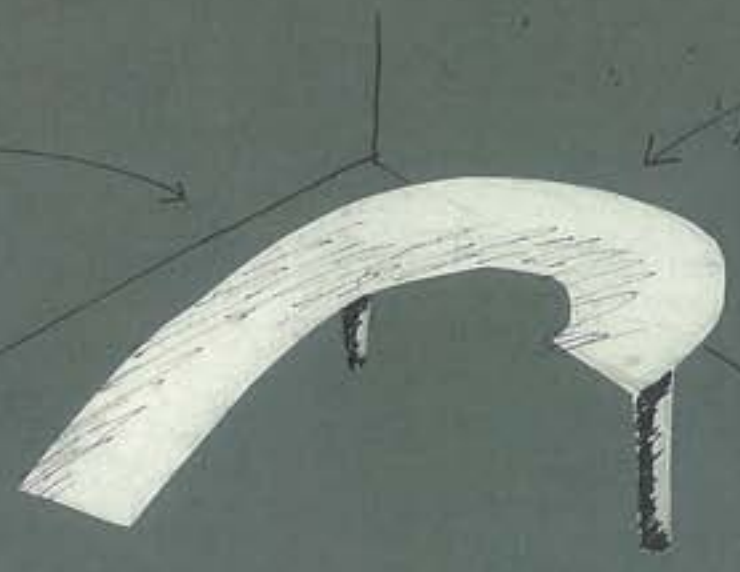
Curves round, turns back on itself. It doesn't take up that much space

Could be put in the corner or in the middle of the room, as a sort of feature



Once again I think the stairs would have to be very wide to fit the volume of people on that it would on a regular school day

Hard to store anything under it as it is an awkward space shape



Again because these stairs are rounded they will need to be wide to fit everyone on

Things can fit under these stairs but they would have to be well priced because if the stair case is used as a feature it will be central, so it could be seating but not storage

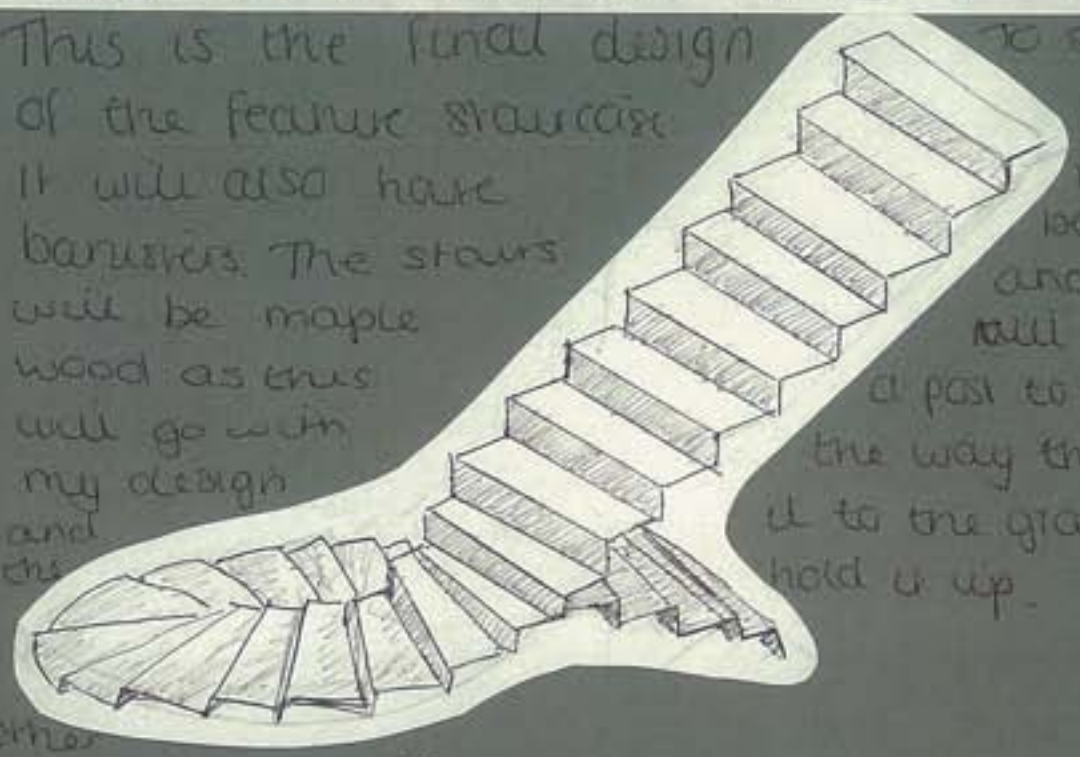
This definately looks more like a feature stair case than it just being functional and blending in. It has a unique shape, it can easily be central but it still is practical

The stair case is similar to the one that is top left of this page, except it has an extra curve at the top to make it a more interesting shape

6TH FORM BLOCK DESIGN - DEVELOPMENT

STAIRCASE

This is the final design of the feature staircase. It will also have banisters. The stairs will be maple wood as this will go with my design and the other furniture



To support it it will need to be strong and probably will require a post to go all the way through it to the ground to hold it up.

I used this to look at as it is a curved staircase, however it is not as curved as mine will be. I like how this integrates with a curved wall though.

I used this image to look at as it is, like mine, not quite a spiral staircase, but more spiral than I plan to have mine. I like how little floor space it takes up.

20mm

10mm.

1 x dowel

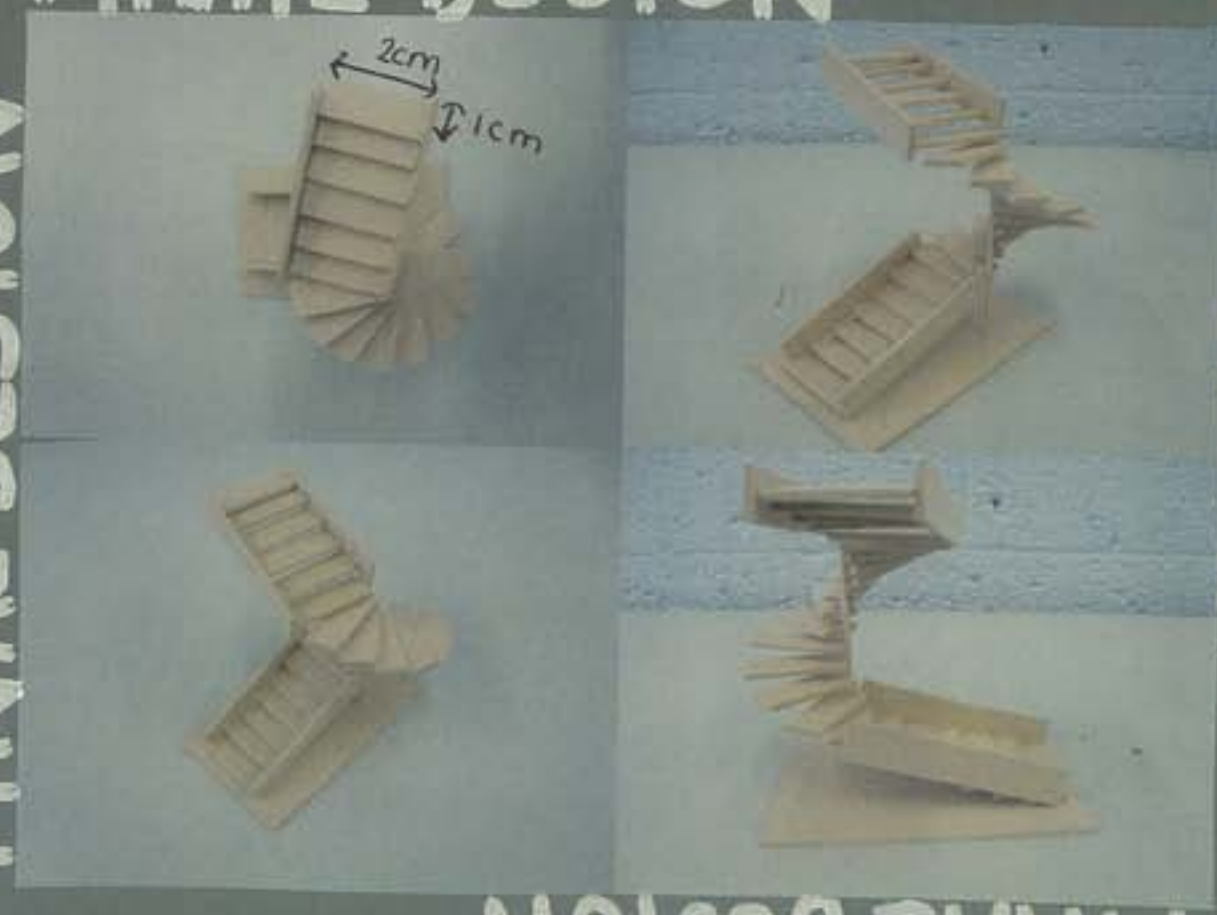
26 x plywood steps

THERMOPLASTIC → heat it up + let it cool in mould

For my model I use acrylic → use a wood mould to bend it

These banisters are similar to the ones I plan to make, only with clear glass between the rails.

FINAL DESIGN

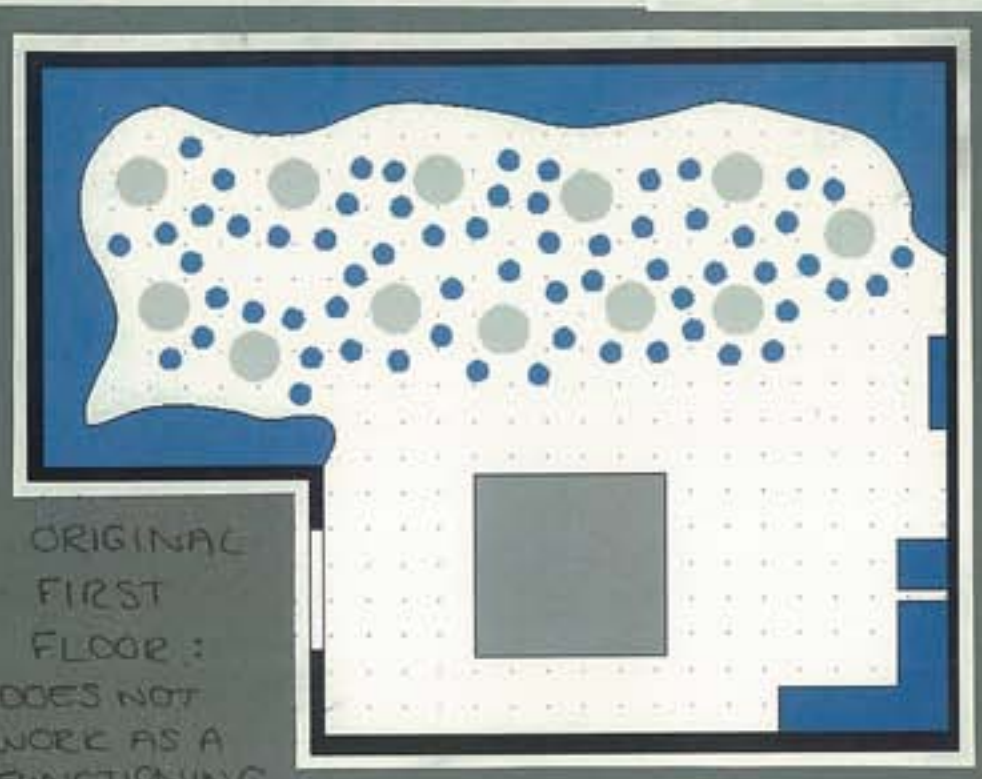


This is a model I made of my final staircase design. I used MDF as replacement of all the materials I am pleased with it. It looks very good and will make a good feature

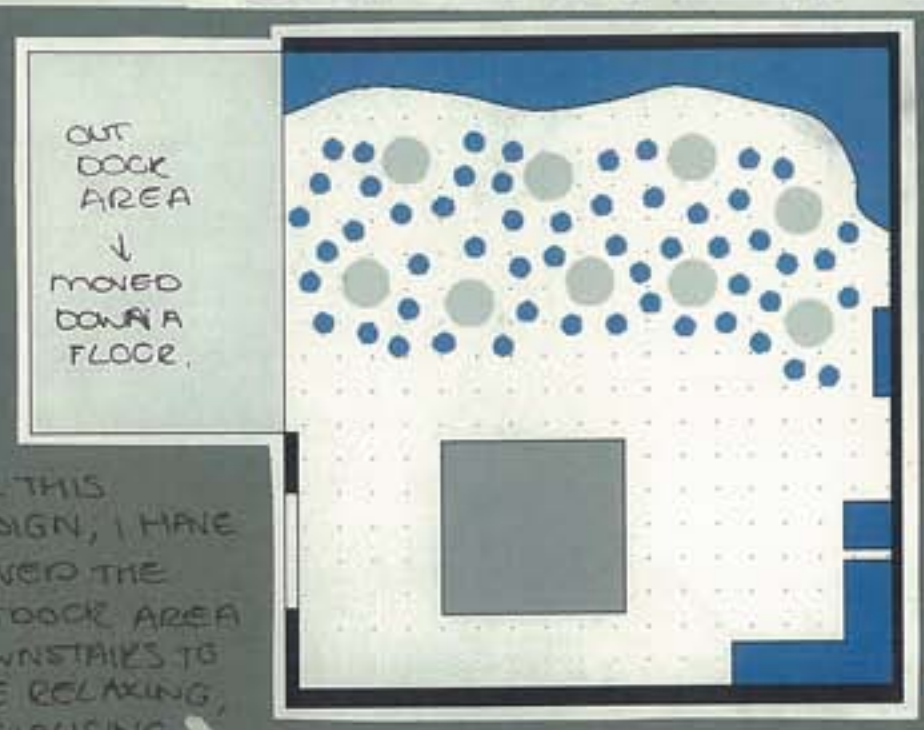
6TH FORM BLOCK DESIGN - DEVELOPMENT

LAYOUTDEVELOPMENT

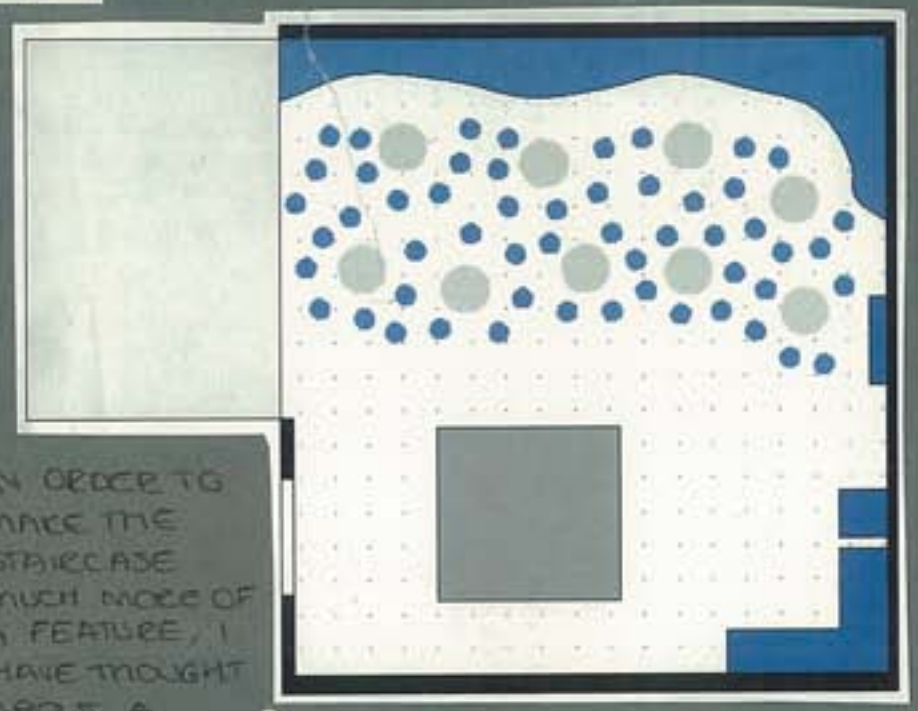
have taken design idea
hree as this was the clients
evolve, to develop + improve



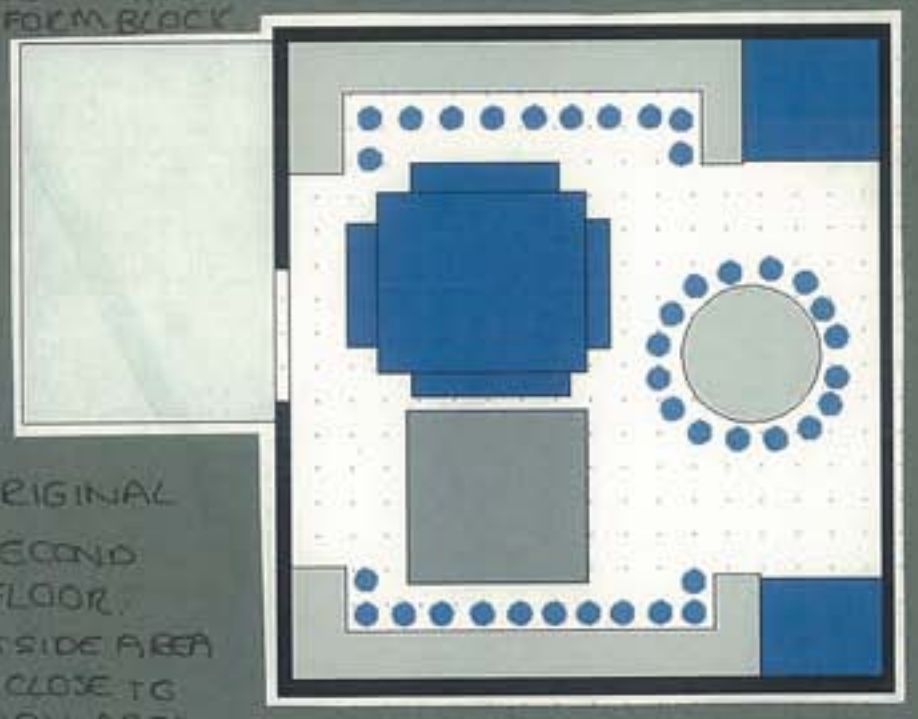
ORIGINAL FIRST FLOOR: DOES NOT WORK AS A FUNCTIONING 6TH FORM BLOCK



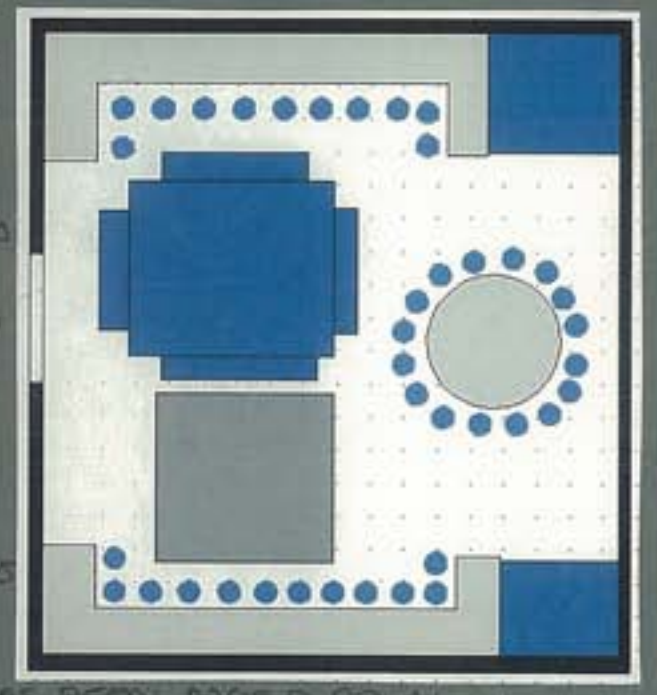
FOR THIS DESIGN, I HAVE MOVED THE OUTDOOR AREA DOWNSTAIRS TO THE RELAXING, SOCIALISING AREA SO PEOPLE WHO ARE STUDYING DO NOT GET DISTRACTED. ALSO, AS THE EXISTING FOUNDATIONS ONLY SUPPORT THE MAIN SQUARE, ENTIRELY NEW ONES WOULD HAVE TO HAVE BEEN BUILT, TO AVOID THIS AND ASSUME THE EXISTING FOUNDATIONS ARE STRONG ENOUGH FOR 2 FLOORS, THE OUTDOOR AREA HAS BEEN MOVED DOWN

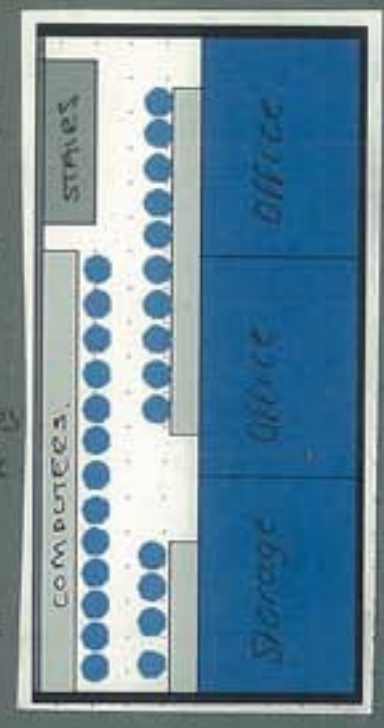


IN ORDER TO MAKE THE STAIRCASE MUCH MORE OF A FEATURE, I HAVE THOUGHT ABOUT A MEZZANINE FLOOR LEVEL. WE HAVE AN ABUNDANCE OF SPACE ACROSS THE TWO FLOORS ANYWAY, AND IT WILL CREATE A MUCH MORE MODERN, LIGHT AND AIRY FEEL TO IT. I HAVE KEPT THE FUNCTION OF THIS SECOND FLOOR THE SAME, TO SEPERATE TEACHERS FROM STUDENTS, AND WORK AREAS FROM NON WORK AREAS, THERE WILL ONLY BE A HALF WALL HOWEVER SO YOU CAN SEE OVER, LIKE A BALCONY.



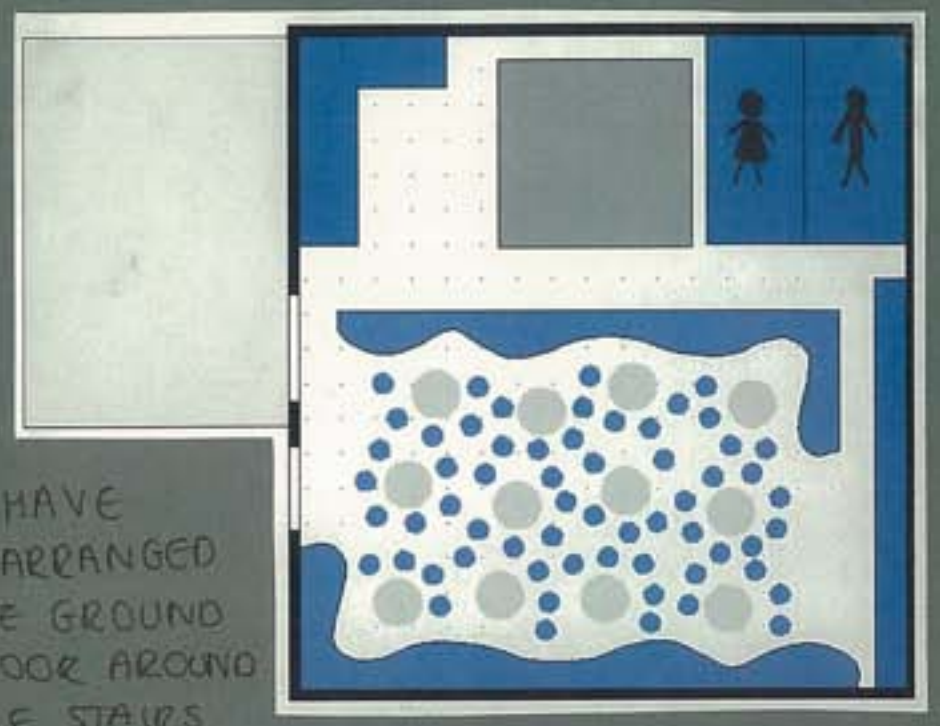
ORIGINAL SECOND FLOOR. OUTSIDE AREA TOO CLOSE TO STUDY AREA.





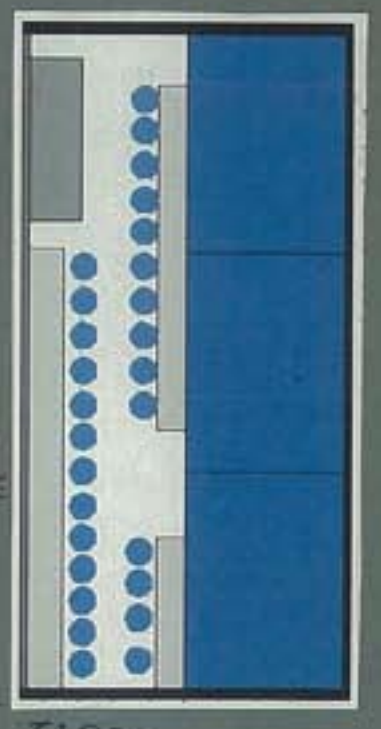
6TH FORM BLOCK DESIGN - DEVELOPMENT

LAYOUT DEVELOPMENT

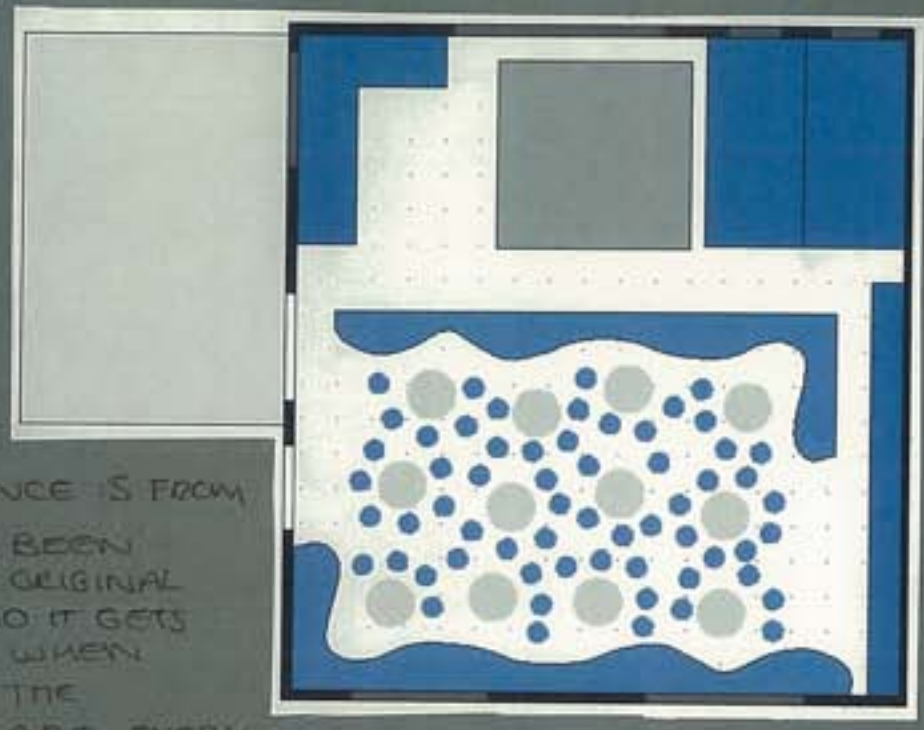


I HAVE REARRANGED THE GROUND FLOOR AROUND THE STAIRS

AS I HAVE MOVED THE STAIRS TO BE MORE OF A FEATURE PLACE, AND MOST CONVENIENT FOR THE MEZZANINE FLOOR. I HAVE KEPT THE CURVY SHAPE OF THE SEATS AS THEY ARE MUCH MORE SUITED TO SOCIALISING, AND THERE ARE PLENTY OF TABLES. THE TOILETS ARE HIDDEN AWAY UNDER THE STAIRS AND THE LOCKERS ARE ALONG THE WALL UNDERNEATH THE MEZZANINE FLOOR

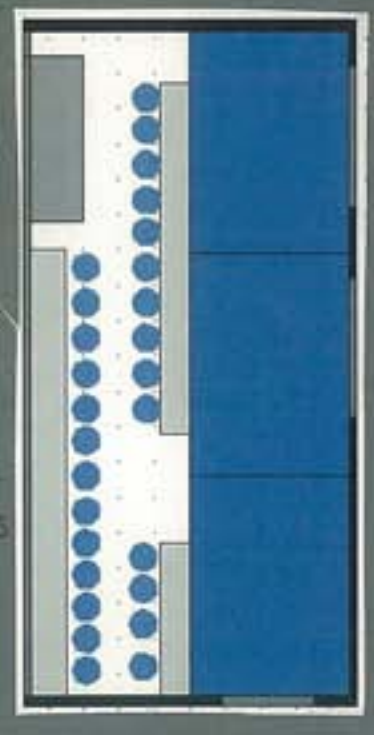


THIS IS THE FINAL FLOOR PLAN OF THE 6TH FORM BLOCK ALL THAT HAS BEEN ADDED SINCE THE LAST STAGE OF DEVELOPMENT IS WINDOWS AND ENTRANCES. THE MAIN ENTRANCE IS FROM THE SIDE AND HAS BEEN MOVED FROM ITS ORIGINAL POSITION. THIS IS SO IT GETS MAXIMUM EFFECT WHEN PEOPLE WALK IN. THE WINDOWS ARE EVERY WHERE TO GET MAXIMUM LIGHT, AND CAN BE BIG AND HIGH ON THE LEFT HAND SIDE TO COVER BOTH FLOORS THE KITCHENS OUT OF THE WAY BUT STILL IN SIGHT AND DISTANCE OF THE KITCHEN. MY ONLY CONCERN IS THAT THE OUTSIDE WILL LOOK TOO BLOCKY HOWEVER I DO LIKE HOW WHEN YOU LOOK OVER THE BALCONY YOU WILL BE ABLE TO SEE THROUGH THE LARGE WINDOW TO THE PRIVATE OUTDOOR AREA. THE STUDY AREA IS OUTSIDE THE OFFICES WHICH SATISFIES MY CLIENT, BUT THEY CAN ALSO SEE THE NONE WORK AREA TO KEEP AN EYE ON THAT AS WELL. THERE ARE QUITE A FEW COMPUTERS FOR PEOPLE TO GO ON, AND PLENTY OF RELAXED SEATING, BUT IT MAY BE HARD TO WALK THROUGH BECAUSE THERE ARE CHAIRS AND TABLES EVERYWHERE. HOWEVER THERE IS AN ALTERNATIVE, EASY WAY TO GET TO THE LOCKERS.



FINAL LAYOUT

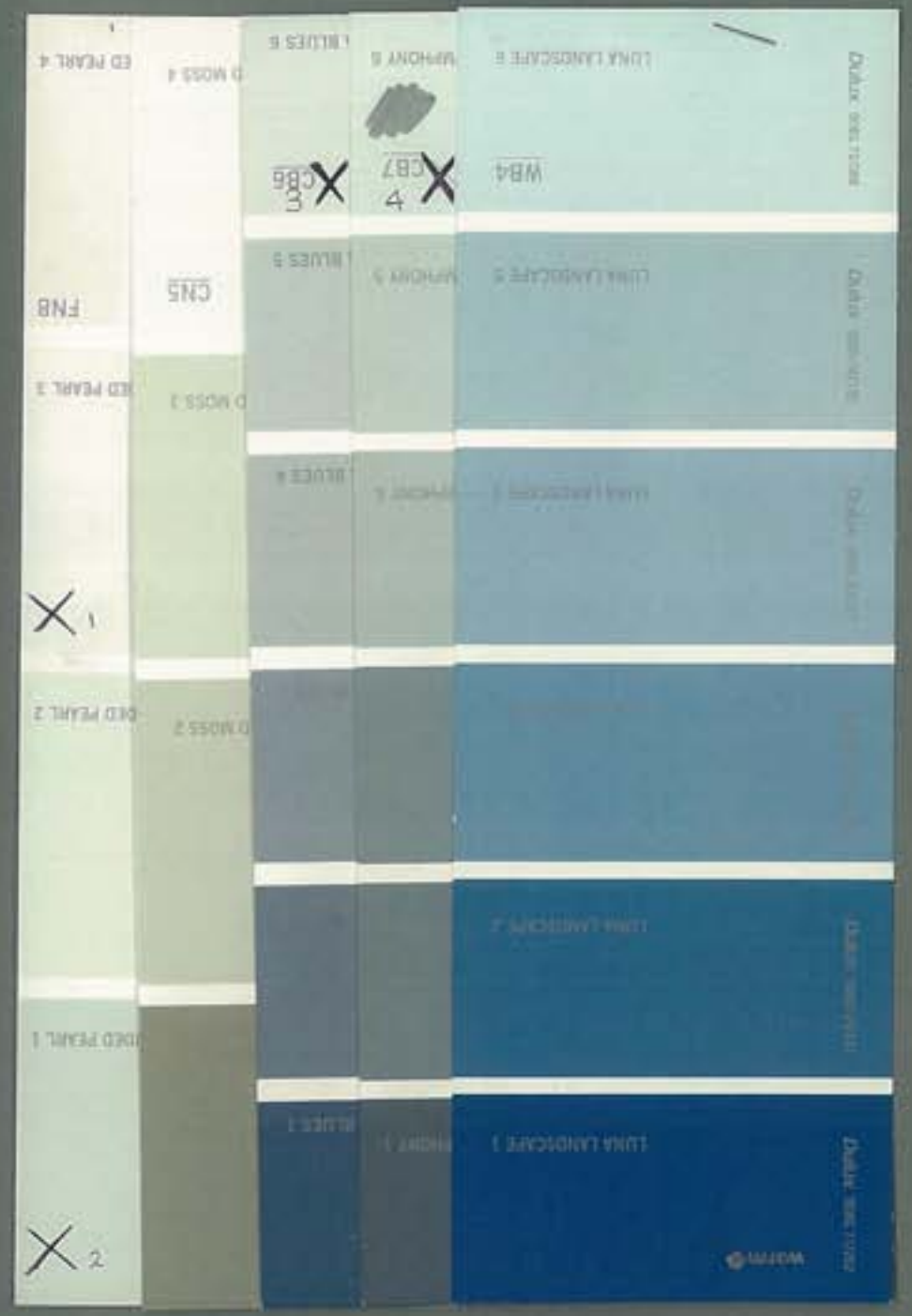
Ground Floor



First Floor

6TH FORM BLOCK DESIGN - DEVELOPMENT

COLOUR DEVELOPMENT



THE COLOURS ABOVE AR THE TOP OF THE CHARTS ARE ALL POSSIBLE COLOURS FOR THE BASE COLOUR OF THE ROOM, AS IN THE COLOUR THAT MOST TIMES WILL BE APART FROM THE STATEMENTS

1 → THIS COLOUR IS TOO PALE, AND IS TOO CLOSE TO THE COLOUR WHITE AND WOULD GET TOO DIRTY AND SEEM BORING.

2 → THIS IS A BIT DARKER THAN 1. BUT IS STILL TO LIGHT FOR WHAT I WANT AND IS ALSO TOO GREY AND DULL.

3 → THIS IS A BIT TOO GREY BUT THE RIGHT KIND OF TONE, NOT TOO LIGHT OR TOO DARK.

4 → PERECT BASE COLOUR, RIGHT TONE AND COLOUR BALANCE.

5 → TOO GREY AND WAY TOO DARK, IT IS COMPLETELY WRONG FOR THE ROOM AND CHOSEN BASE COLOUR.

6 → TOO DARK AND MUCH TOO GREY IN THE BLUE, IT IS A BIT SOLEMN AND DOES NOT HAVE THE RIGHT FEEL.

7 → TOO BRIGHT, WAY TOO ROYAL BLUE, NEEDS TO BE ALOT CALMER EVEN THOUGH ITS A STATEMENT COLOUR.

8 → PERECT, RIGHT TONE, RIGHT TYPE OF BLUE, STATEMENT COLOUR.

9 → TOO LIGHT, TOO BABY BLUE-RATHER THAN A STRONG COLOUR ENOUGH TO BE A STATEMENT COLOUR

CHOSEN

BASE → Steel Symphony 6

STATEMENT → Royal Regatta 3

Both Dulux

THESE ARE THE COLOURS CHOSEN, AT THE TOP OF THE CHARTS TO USE AS STATEMENT COLOURS TO KEEP WITH THE SCHOOL THEME BUT ADD A BIT OF INTEREST

6TH FORM BLOCK DESIGN - DEVELOPMENT

NTERIOR DEVELOPMENT

THIS STAIRCASE IS NOT HOW IT WILL LOOK, IT WILL BE THE ONE THAT I HAVE DESIGNED.

IN THE 3D COMPUTER MODEL I COULD GET A BETTER SENSE OF WHAT NEEDED CHANGING. I CHANGED THE WAY THE TOILETS WERE SPLIT TO MAKE THE MOST OF THE AVAILABLE SPACE. I AM QUITE HAPPY WITH THE GENERAL LAYOUT. I ESPECIALLY LIKE THE WAY THAT THE TOP FLOOR LOOKS OVER THE BOTTOM FLOOR, I THINK THIS IS A GOOD FEATURE. I ALSO LIKE HOW THE KITCHEN IS OUT THE WAY WITH ALOT OF SPACE ROUND IT. THE BEST PART IS THAT THE WAY THE ROOM IS LAYED OUT MEANS THAT THE FEATURE STAIRCASE REALLY IS A FEATURE, AS IT HAS ITS OWN SPACE

EVEN THOUGH THERE IS LESS SPACE ON THE MEZZANINE FLOOR LEVEL THAN THERE WOULD BE IF IT WAS A FULL TOP FLOOR, I THINK IT WORKS BETTER THIS WAY. THIS IS BECAUSE IT MAKES THE ENTIRE BUILDING FEEL BIGGER BECAUSE IT IS MORE OPEN. I LIKE HOW THE WORK AREA IS UP THERE AS WELL SO IT IS COMPLETELY OUT OF THE WAY AND PEOPLE CAN CONCENTRATE. THE LARGE GLASS WALLS ON THE OFFICES ALLOW TEACHERS TO SEE OUT, AND LIGHT TO GO IN

CLIENT VIEW ON FIRST FLOOR: I REALLY LIKE THE LAYOUT OF THE FIRST FLOOR, THE ONLY THING I WOULD BE THAT I CANNOT KEEP AN EYE ON NAVE WALKERS, BUT ACTUALLY THE MEZZANINE FLOOR AND GLASS WINDOWS/WALLS MAKES IT EASY TO KEEP AN EYE ON THOSE WHO ARE WORKING AND THOSE WHO ARE NOT. ALSO I LIKE HOW THE STORAGE AREA IS UPSTAIRS OUT OF THE WAY SO IT IS NOT A MAIN FEATURE

CLIENT VIEW ON GROUND FLOOR: I LIKE THE LAYOUT OF THE GROUND FLOOR, ESPECIALLY HOW THE UNIMPORTANT PARTS e.g. TOILETS ARE TUCKED AWAY SO THEY ARE NOT MAIN FEATURES.

6TH FORM BLOCK DESIGN - DEVELOPMENT

FURNITURE DEVELOPMENT

SOFAS

FEATURE BLUE COLOUR TO STAND OUT. ALSO IF THEY WERE LIGHT THEY WOULD STAIN EASY.

BUY ALL THE SOFAS IN

FITS THREE PEOPLE, BETTER NUMBER THAN TWO.

LEATHER, MODERN + WIPES EASY

MODEL USING STYROFOAM?

TABLES & CHAIRS

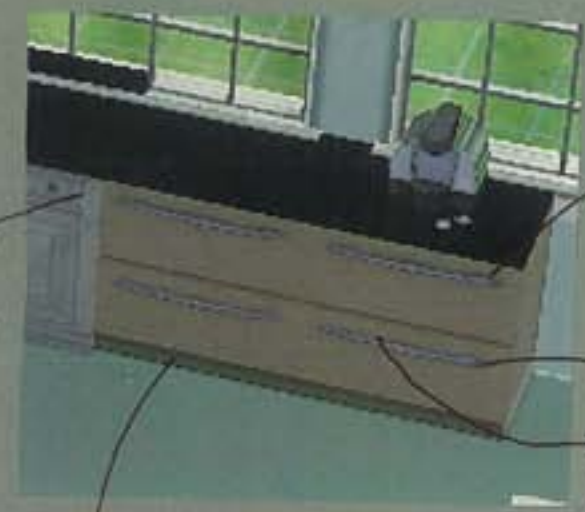
PLASTIC / METAL BOUGHT IN CHAIRS.

WHITE/GREY/BLUE COLOUR (BASE) TO TAKE AWAY FROM DARK SOFAS → NICE COLOUR COMBO.

CURVED EDGES, MORE MODERN.

MODEL USING PLASTIC (ACRYLIC)

KITCHEN UNITS



PINE WOOD / MAPLE KITCHEN UNITS WITH BLACK MARBLE SURFACE.

STAINLESS STEEL HANDLES.

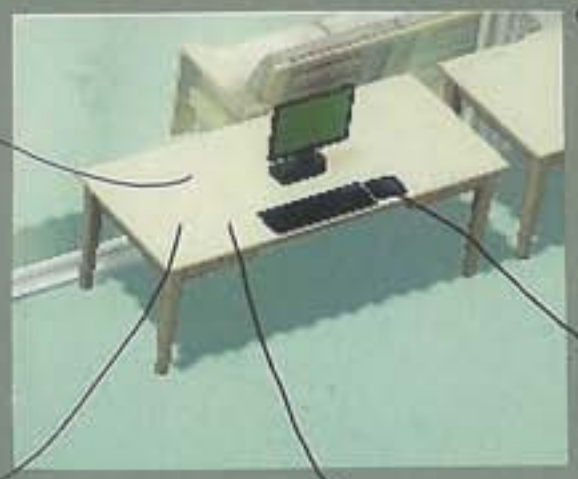
LOOKS MODERN.

BOUGHT IN.

MARBLE EXPENSIVE BUT PRACTICAL

MODEL USING SIMILAR COLOUR WOOD + BLACK ACRYLIC

COMPUTER DESKS



LARGE DESK TO ALLOW STUDENTS TO DO WORK EITHER SIDE AS WELL AS USE THE COMPUTER.

BOUGHT IN, MODEL USING SCRAPS OF SIMILAR COLOUR WOOD

NICE, LIGHT MAPLE COLOUR (MATCHES KITCHEN UNITS) MODERN

KEEPS ROOM LIGHT AND AIRY.

(MEANT TO BE LOCKERS).

LOCKERS

BOUGHT IN, MODEL FROM LASER CUT PLASTIC?

4 LOCKERS HIGH AND WIDE FOR EACH BLOCK

ALTERNATE COLOURS, BASE + FEATURE COLOURS, LOOKS INTERESTING, NOT TOO DARK OR LIGHT.

TOILETS

NOT TOO DARK FOR SMALL ROOM.

FEATURE COLOUR WITH HINTS OF BASE FOR DETAIL, HARD TO GRAFFITI ON ASWELL

PRACTICAL MATERIAL, EASY TO KEEP CLEAN

BOUGHT IN, MODEL USING PAINTED MDF?

6TH FORM BLOCK DESIGN - DEVELOPMENT

COMPONENT DEVELOPMENT

SEATING AREA

SOFAS ROUND THE EDGE, TABLES AND CHAIRS IN THE MIDDLE FOR EASE OF SOCIALISING AND TO SUIT DIFFERENT NEEDS E.G. EATING.

CONTRAST IN COLOURS.

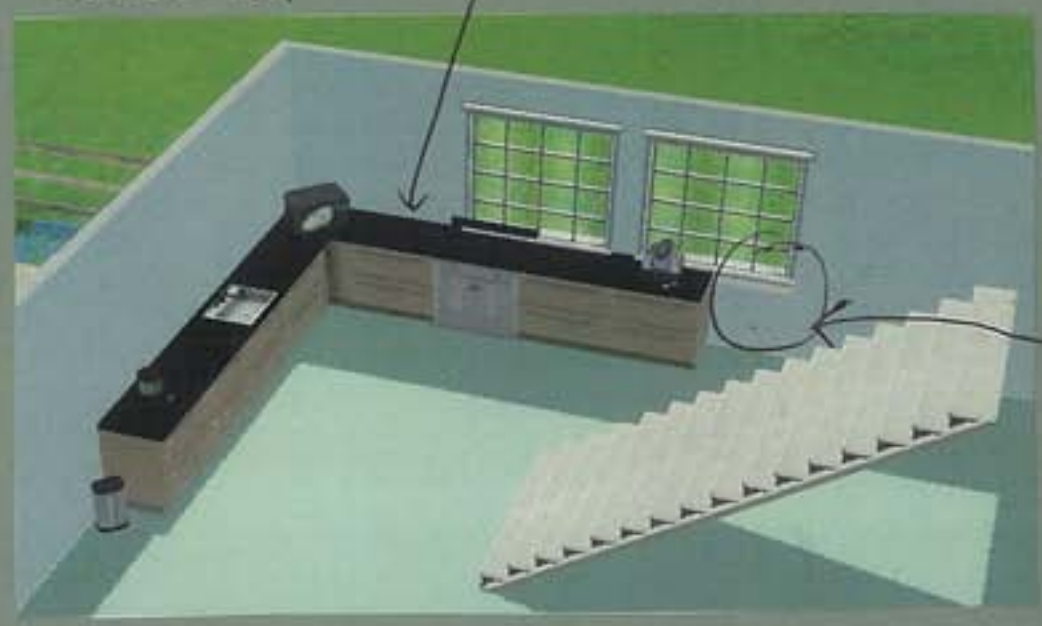
TV SCREEN FOR DAILY NOTICES.

VERY LARGE AREA HALF COVERED BY 1ST FLOOR, 1ST THING YOU SEE AS YOU WALK IN.

VERY OUT OF THE WAY, BUT THE CABINETS SOMEHOW FRAME THE FEATURE STAIRCASE.

KITCHEN AREA

BASIC APPLIANCES, MICROWAVE, FRIDGE, SINK PLUS A VENDING / HOT DRINKS MACHINE.



TOILETS

MORE TOILETS IN GIRLS THAN BOYS, BOYS HAVE A URINAL

UNDER THE STAIRS = OUT THE WAY

SMALLER WINDOWS TO SUIT PURPOSE

KEPT WITH THE SAME COLOUR SCHEME TO FOLLOW THE THEME THROUGH.

SINKS COMING OFF THE WALL TO SAVE SPACE → FEEL BIGGER.

OFFICES

USED TO SHARE AN OFFICE, BUT NOW HAVE ONE EACH

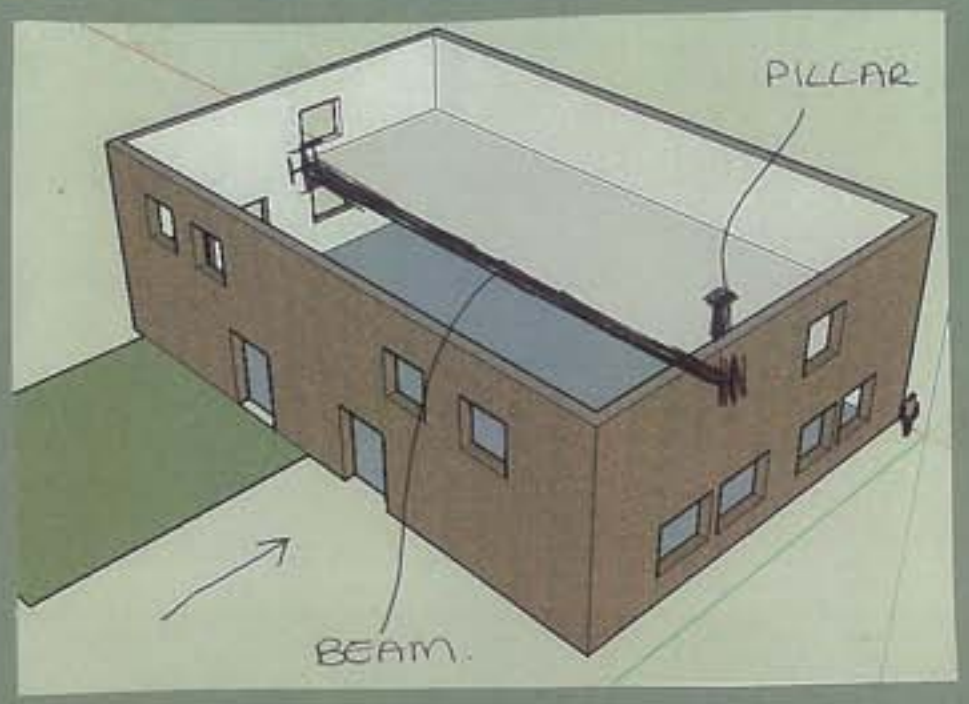
MAYBE NEEDS MORE FURNITURE TABLE? MORE STORAGE?

GLASS DOORS / WINDOWS TO GET LARGE AMOUNTS OF LIGHT IN AND ENABLE THEM TO SEE OUT EASILY.

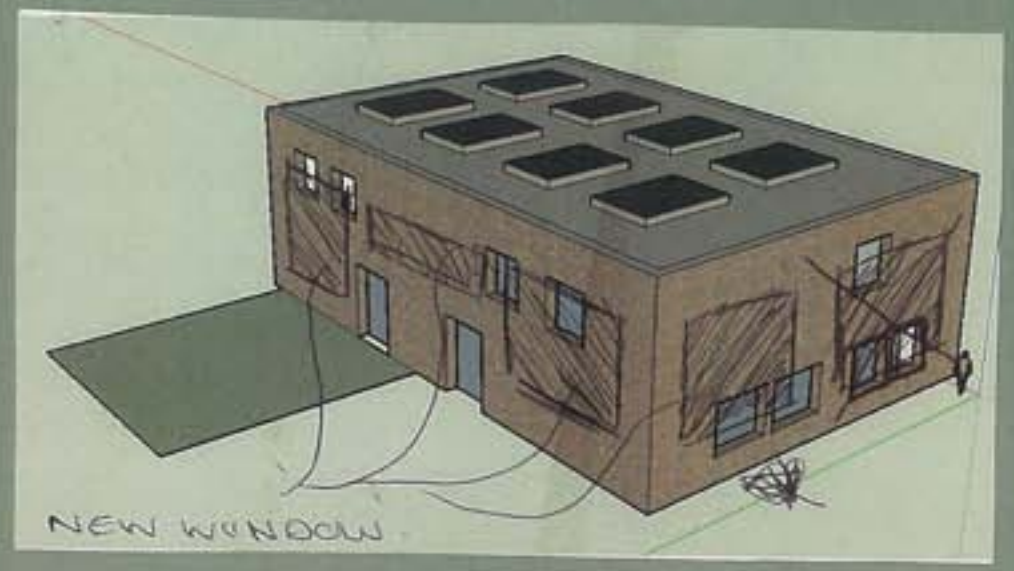
ALSO LOOKS VERY MODERN + CONTEMPORARY.

6TH FORM BLOCK DESIGN - DEVELOPMENT

EXTERIOR DEVELOPMENT

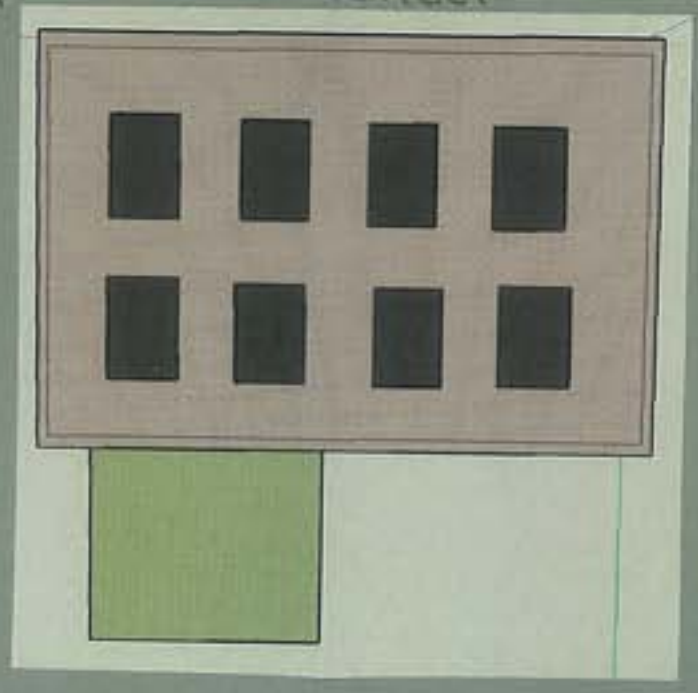


The mezzanine floor level is very large and therefore cannot be held up just by the three surrounding walls. Therefore I am going to use beams and pillars. One beam will go straight across from one outside wall to the other supporting the edge of the mezzanine floor. (shown on image above). Then, looking at the building from the way shown by the arrows on the image, the left of the floor is held up further by the walls of the toilet, however the right side needs more support. I will do this by adding a pillar shown also on the image. The walls will be made out of concrete and insulated in the cavity between the walls to again cut down on energy useage.



I have decided to change the windows in keeping with the mezzanine floor level giving a big open space. Large windows that cover both floors would let a lot of light in. They would be expensive but worth it. They would be double glazed to save on energy/heating. Of course the window on the side marked ✕ will have to be out of the way of the beam

The roof of the 6th form block will be flat. This is because this is where the solar panels will be, and a flat roof will enable them to catch a maximum amount of sunlight. This is the most cost effective way. There are systems that move the panels depending on where the sun is in the sky, but this is too expensive and would look out of place in a school



Aswell as this a slanted roof would look odd as the rest of the school has flat roofs. The space created by a slanted roof would also be wasted and therefore is pointless

6TH FORM BLOCK DESIGN - DEVELOPMENT

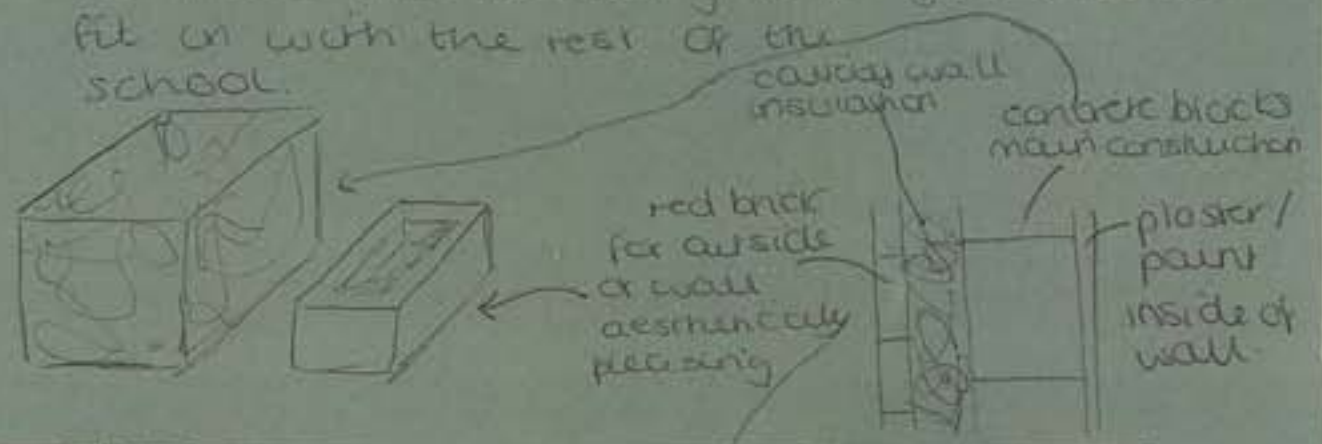
COMPUTER DRAWINGS

MATERIALS

The main wood that is going to be used throughout is maple for the light colour and high quality finish. It will probably be MDF, with a thin layer of maple on top to cut down the cost. The flooring will be an easy to clean laminate, as it is cheap and durable and comes in many different colours and styles.

OUTSIDE OF THE BUILDING

AS STATED BEFORE the walls will be constructed from the regulation concrete blocks The outside will be the red bricks however as shown on the diagram to make the building look good and fit in with the rest of the school.



6TH FORM BLOCK DESIGN - DEVELOPMENT

6TH FORM BLOCK DESIGN - DEVELOPMENT

SOFAS

CORNER SOFA A GOOD IDEA FOR THE CONTES LARGE GROUPS.

LIKE THE METAL LEGS

DIFFERENT SIZES GOOD

LIKE DIFF COLOURS

NOT SO MUCH THE STYLE OF THE SOFAS.

WOULD NEED TO BE BLUE.

FAVOURITE GOING TO USE!

KITCHEN AREA

LIKE THE BLACK MARBLE TOPS

TOO GRAINY

GOOD MATERIAL

NICE HANDLES

LIKE GLASS IN CUP BOARD.

MAYBE FROSTED

TABLES + CHAIRS

This is a fold up table. Looks quite cheap

Good colour doesn't shows mess easily

Easy clean + cheap.

Plastic top easy clean.

round shape ideal for purpose.

Stylish

would need a different colour - Blue - Darkish

Hard

wrong material

Nice, stylish, modern sleek design

Look ok but maybe a little bit tacky

space saving solution although wood maybe an idea

white gets too dirty

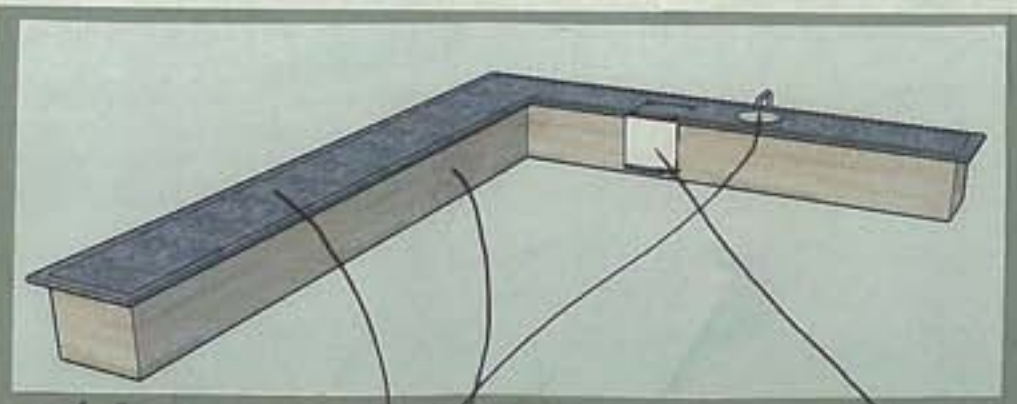
Nice way to include colour

wrong material for what was planned.

Nice material for legs

again a good shape

COMPONENTDEVELOPMENT



Kitchen

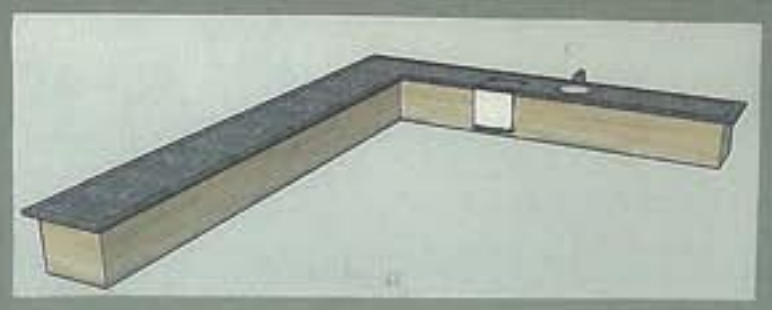
Maple wood doors, MDF / Maple veneer internal

Black marble surface
→ easy clean
→ looks good
→ expensive
→ water proof.

Fridge integrated into cupboards → nice and tucked away.

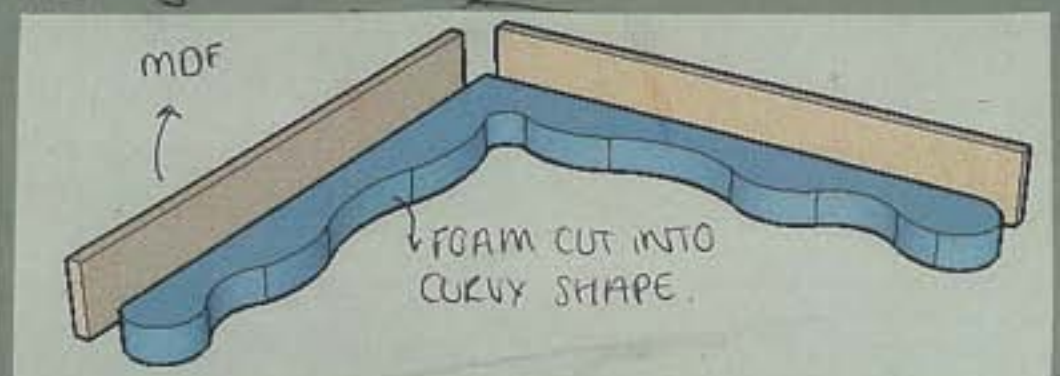
Circular stainless steel sink and tap with drawing board cut into the marble.

For the model:
- wood pieces for cabinets
- Black acrylic top with hole ~~drilled~~ with 10.5mm drill bit or pillar drill → cone of paper underneath FOR SINK.

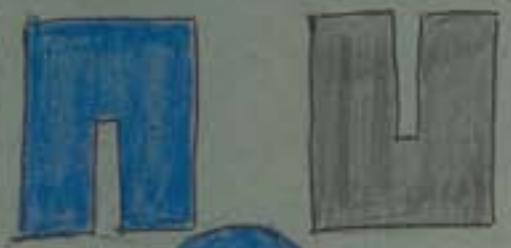


Sofas

Made out of dark blue leather
→ royal regatta blue
In real life.
For my model → Foamm + MDF



Tables + Chairs



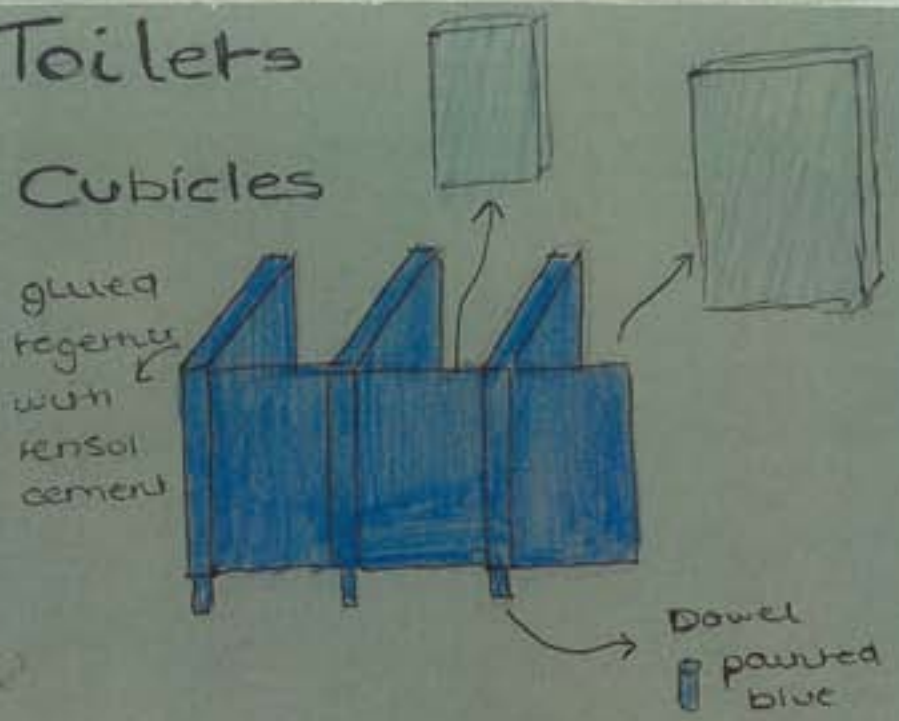
Disc made out of acrylic, blue or grey

Either 2 adjoining pieces to create a cross, or 3 pieces of dowel as 3 table legs
Blue for chairs, Grey for tables

easier to mass make on laser cutter

2 options.

Toilets + Cubicles



Sinks

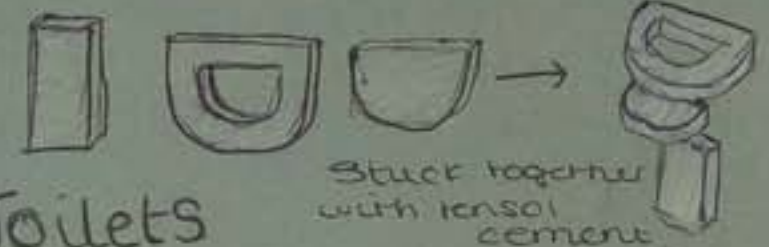
On the laser cutter I can create pieces to put together to make a sink

Toilets

I can also use the laser cutter to produce toilets and urinals

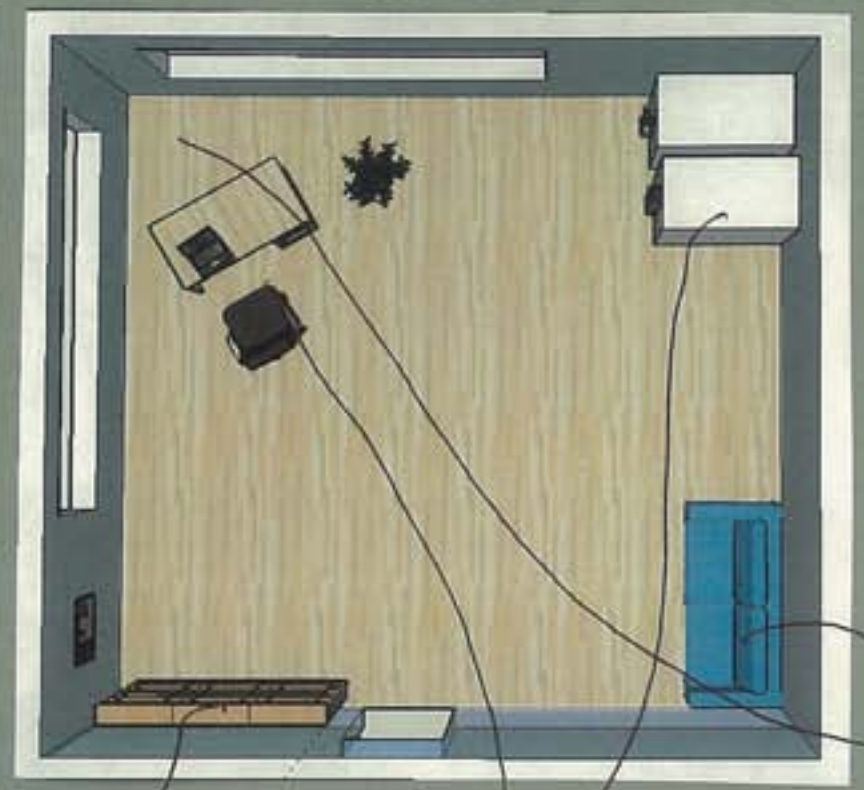
The urinal is made out of 3 pieces

The toilet will be made out of 5 pieces



6TH FORM BLOCK DESIGN - DEVELOPMENT

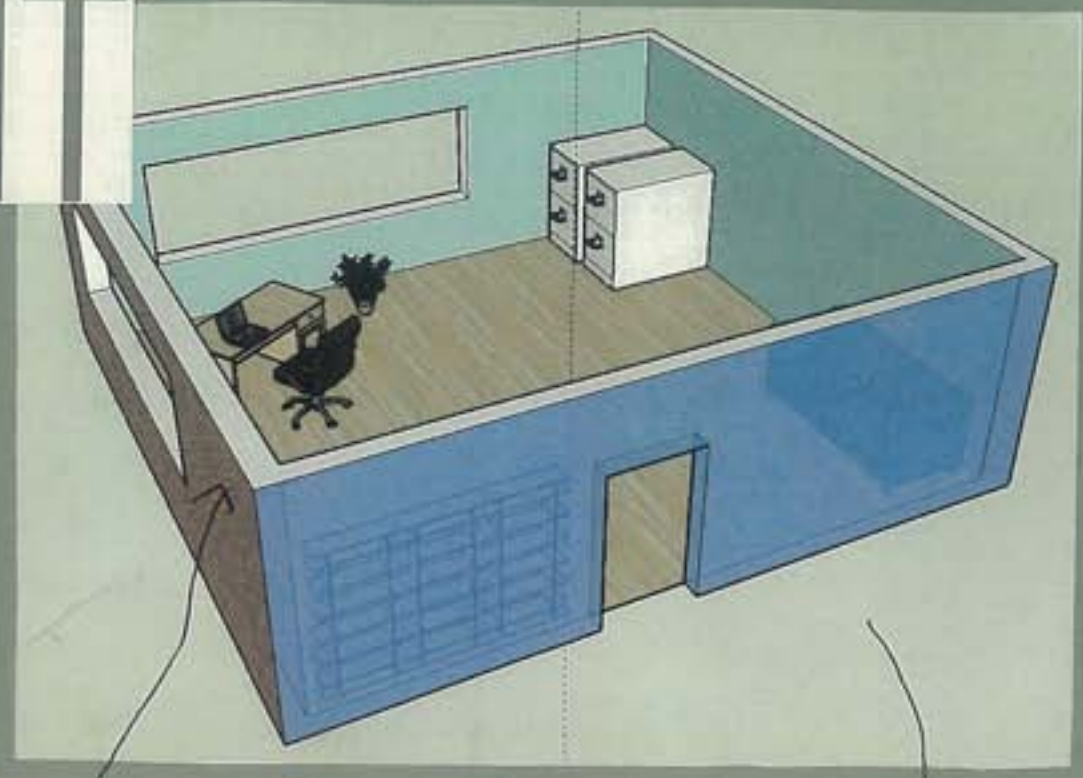
OFFICE DEVELOPMENT



This is the final layout of the offices. This office in particular is the Head of Sixth Form's, my client but the rest will be the same. There is alot of space left in the office, for the teachers to add more storage or seating if needed. It has the same colour scheme as the rest of the building with the flooring carrying on through.

The 'sofa' is for students who get called to the office to sit in.

Trash can could go here to be hidden.



There is a notice board on the other side of this wall for the head to hang up reminders.

This design makes the most of natural light.

Shelves for storage

Filing cabinets for storage

The desk will be the same as those used for the work area but the chair will be a better one as the H.O Sixth will sit in it most of the day.

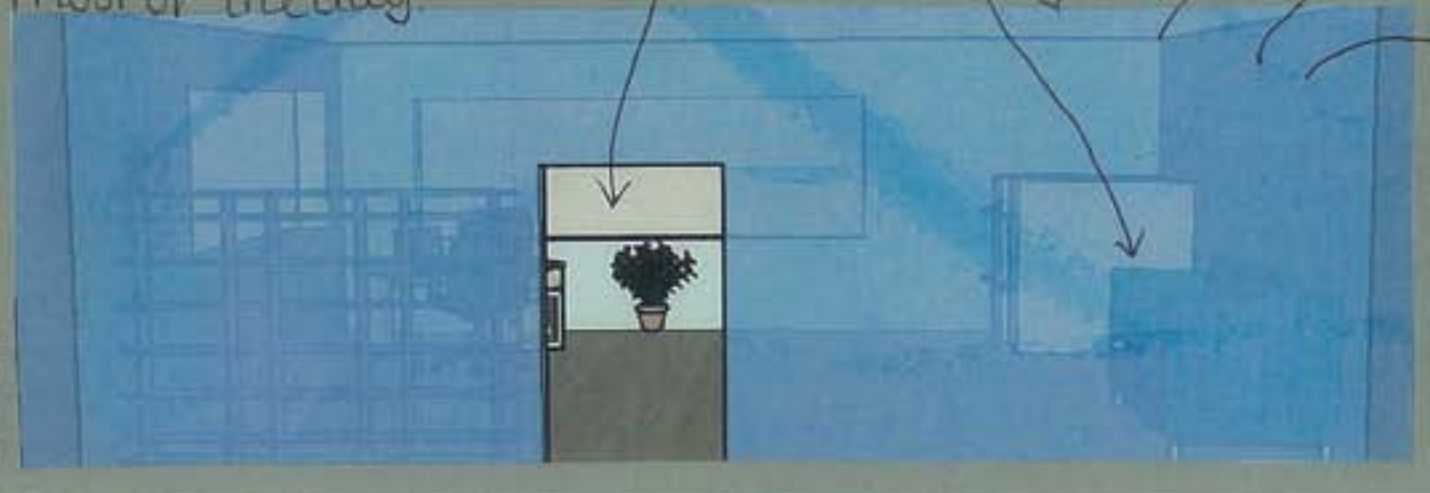
Desk and chair pointed to the corner to make the best of the two large windows, however it does take up more space that way. The desk will be basic and will be made from maple veneer to keep with the theme and keep the cost down.

In the model it will be a small rectangle and four pieces of dowel.

Stainless steel door handle.

A glass door will go in here the same as the glass wall to keep it sleek

A table could be fitted here for more surface space or another filing cabinet



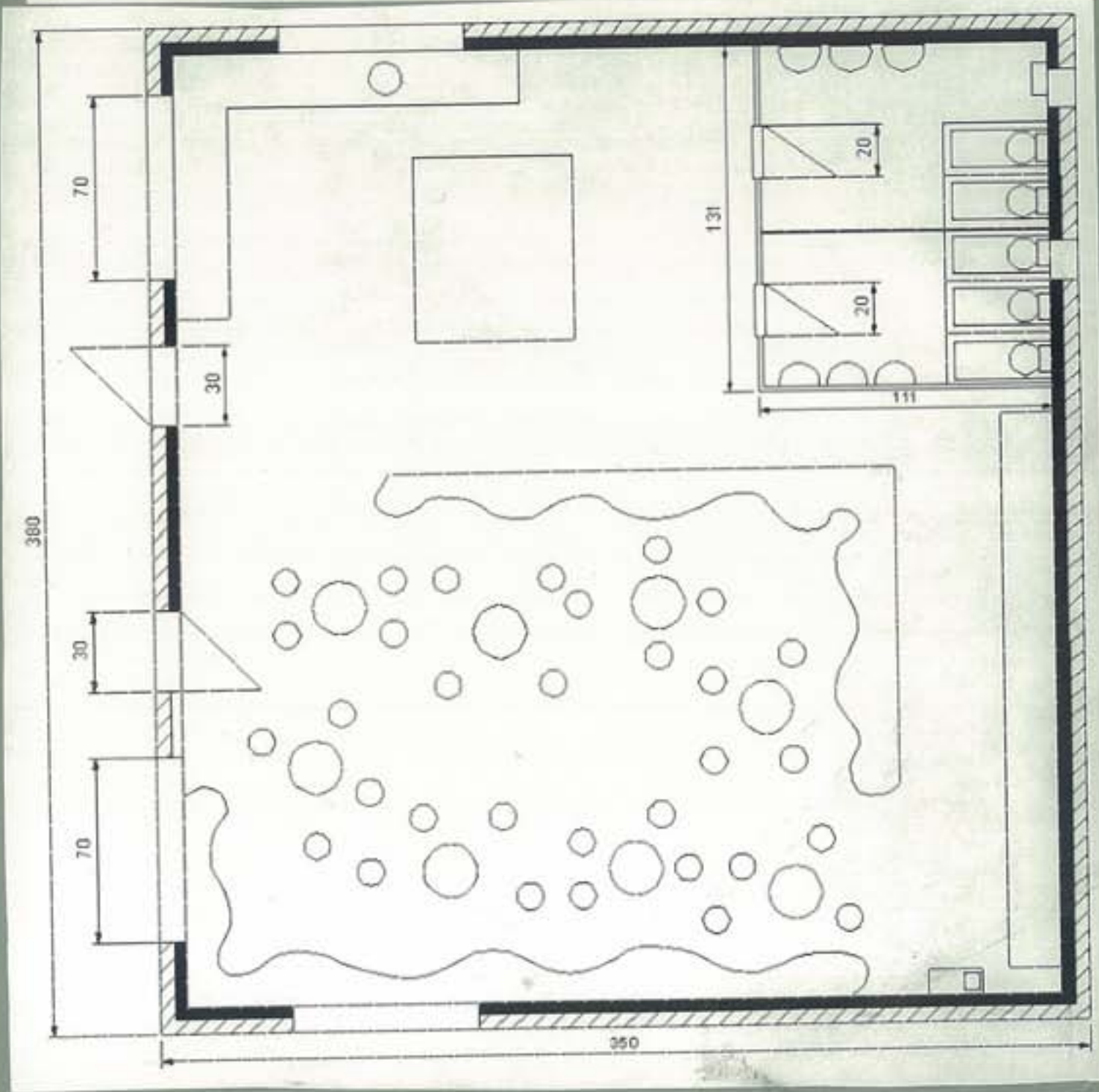
Teacher can watch over working students.

Feels more open

This wall between the office and the rest of the mezzanine level will be made out of translucent, shatter resistant glass to allow light to flow through.

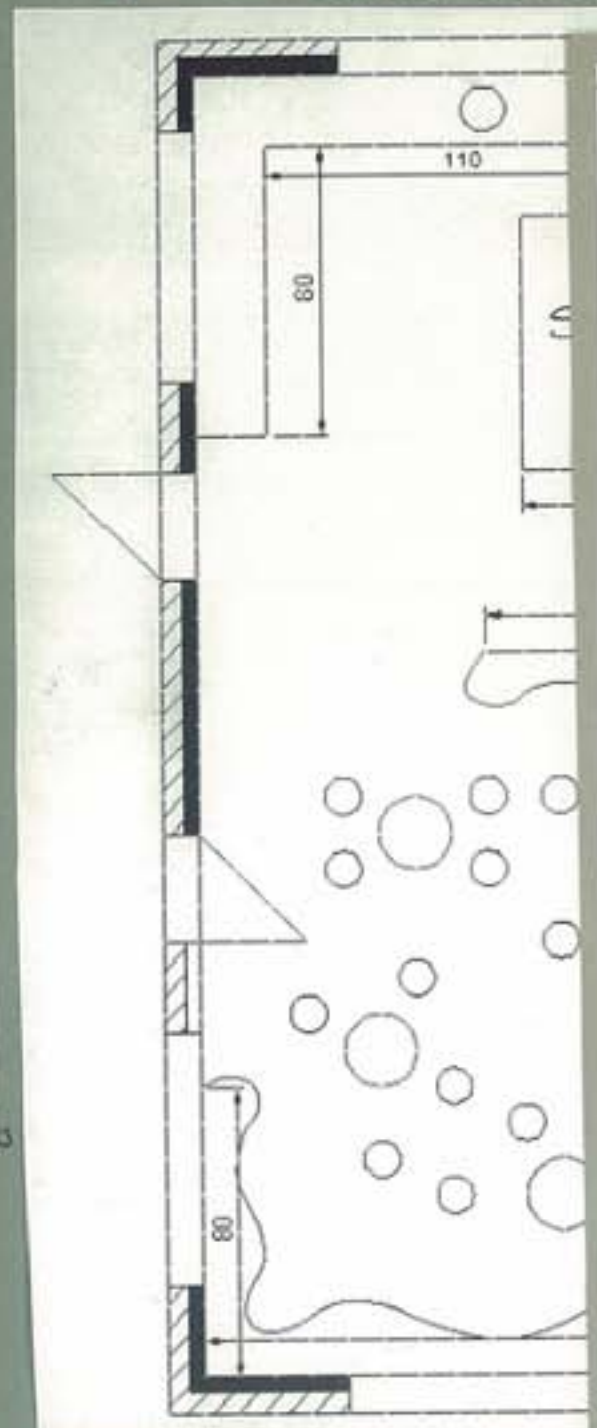
6TH FORM BLOCK DESIGN - DEVELOPMENT

FINAL FLOOR PLANS AND MEASUREMENTS



This is a floor plan of the bottom floor with measurements of the main structure. It also shows the structure of the outer walls with the breeze blocks and main bricks. I chose not to include the outdoor area that comes off of the side, but this fits exactly into the space given. This will help me when I start making th

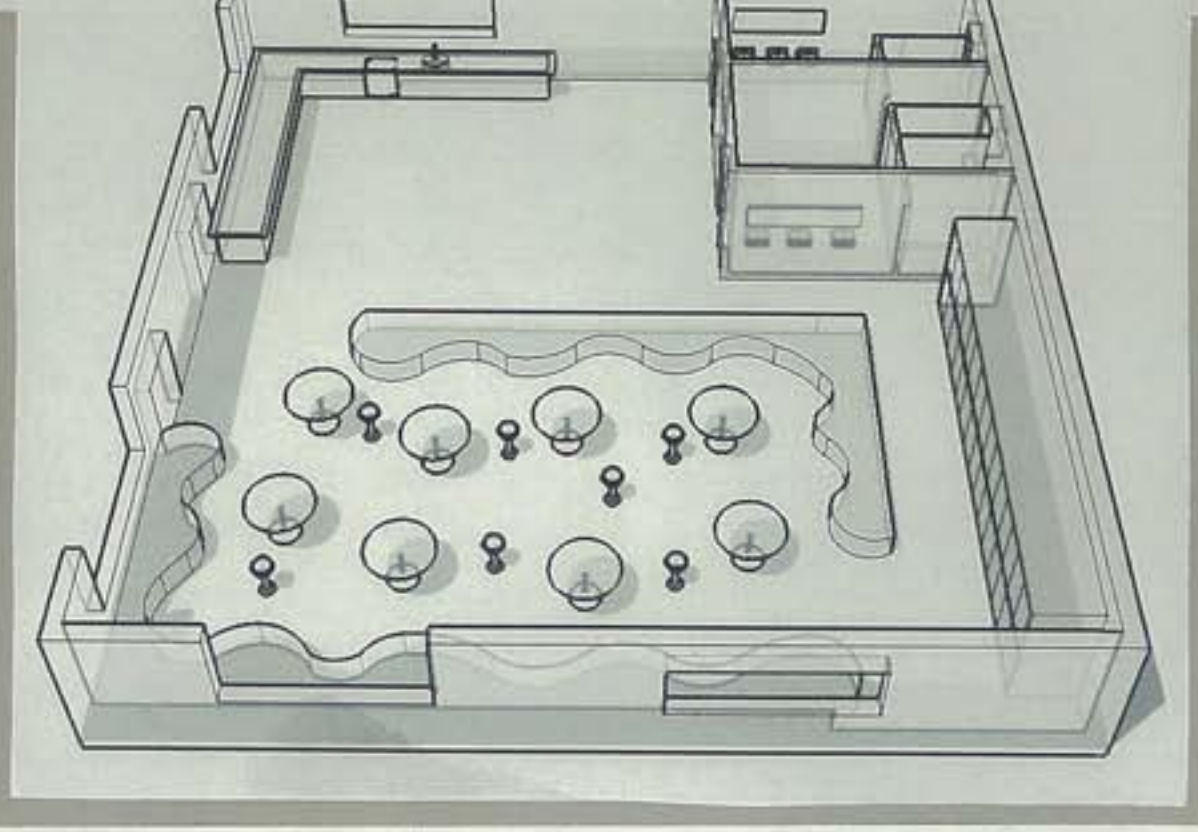
Below is the same floor plan but with measurements of all the components inside which have all been in exactly the right place. The images are to scale. I have not put in the shape of the stairs, just the area in which it will go. I have also put in the areas where the doors will open to. This image will help me when it comes to making and placing furniture



6TH FORM BLOCK DESIGN -

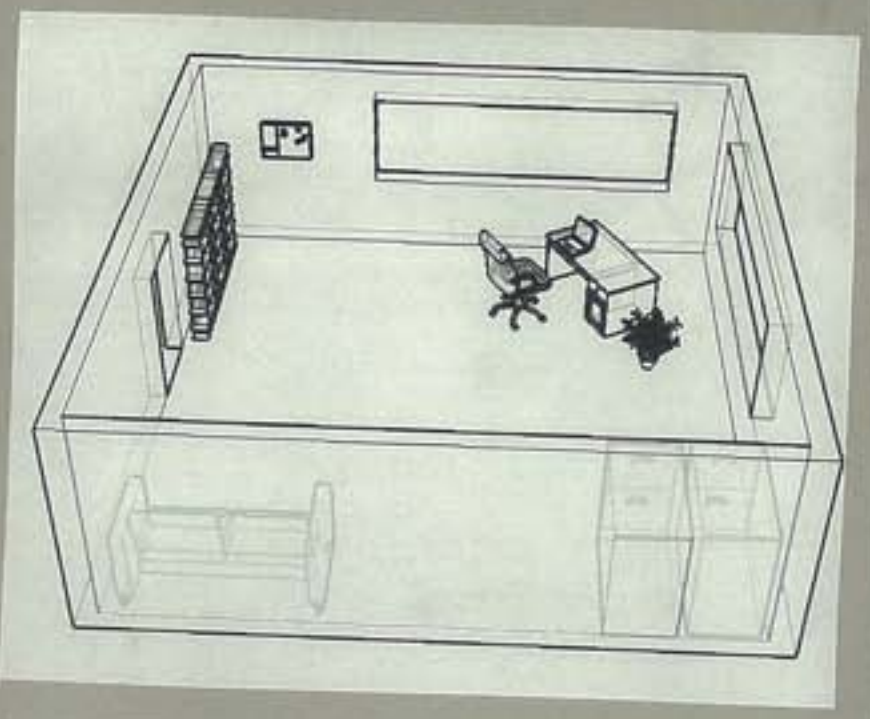
ONE POINT PERSPECTIVE DRAWING

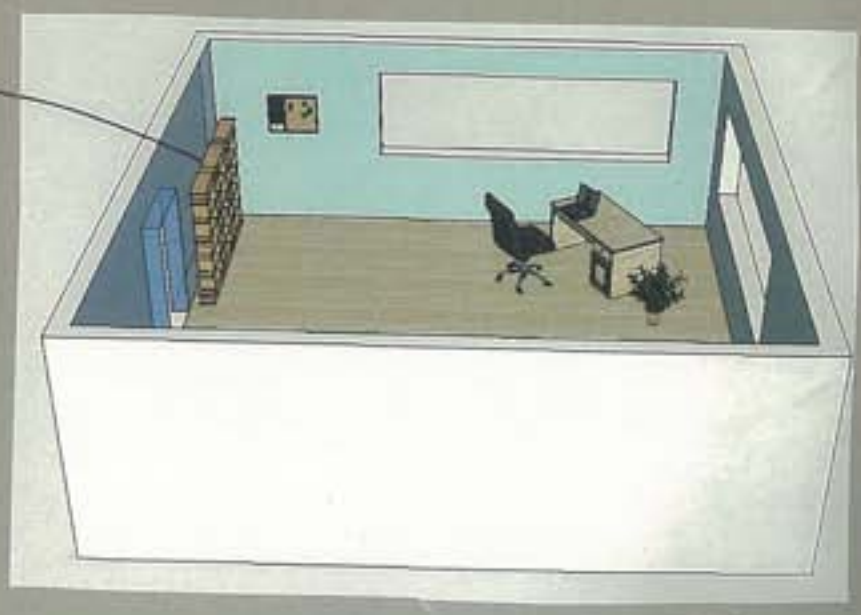
→ Real life materials



Tables + chairs → ABS.

Maple wood shelves

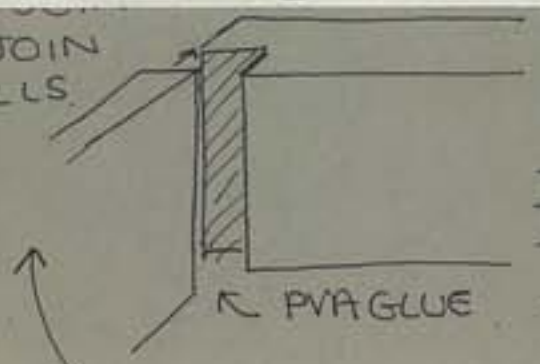




6TH FORM BLOCK DESIGN - PLANNING

EXTERIOR SHELL OF BUILDING

TO JOIN WALLS.



This joint is good because it is:
- strong
- neat
- large gluing area
- less exposed end grain

USE ON 4 WALLS. → 2 walls on ground floor, 2 walls on 2nd floor

USE CLAMP THAT GOES ROUND ALL FOUR WALLS.

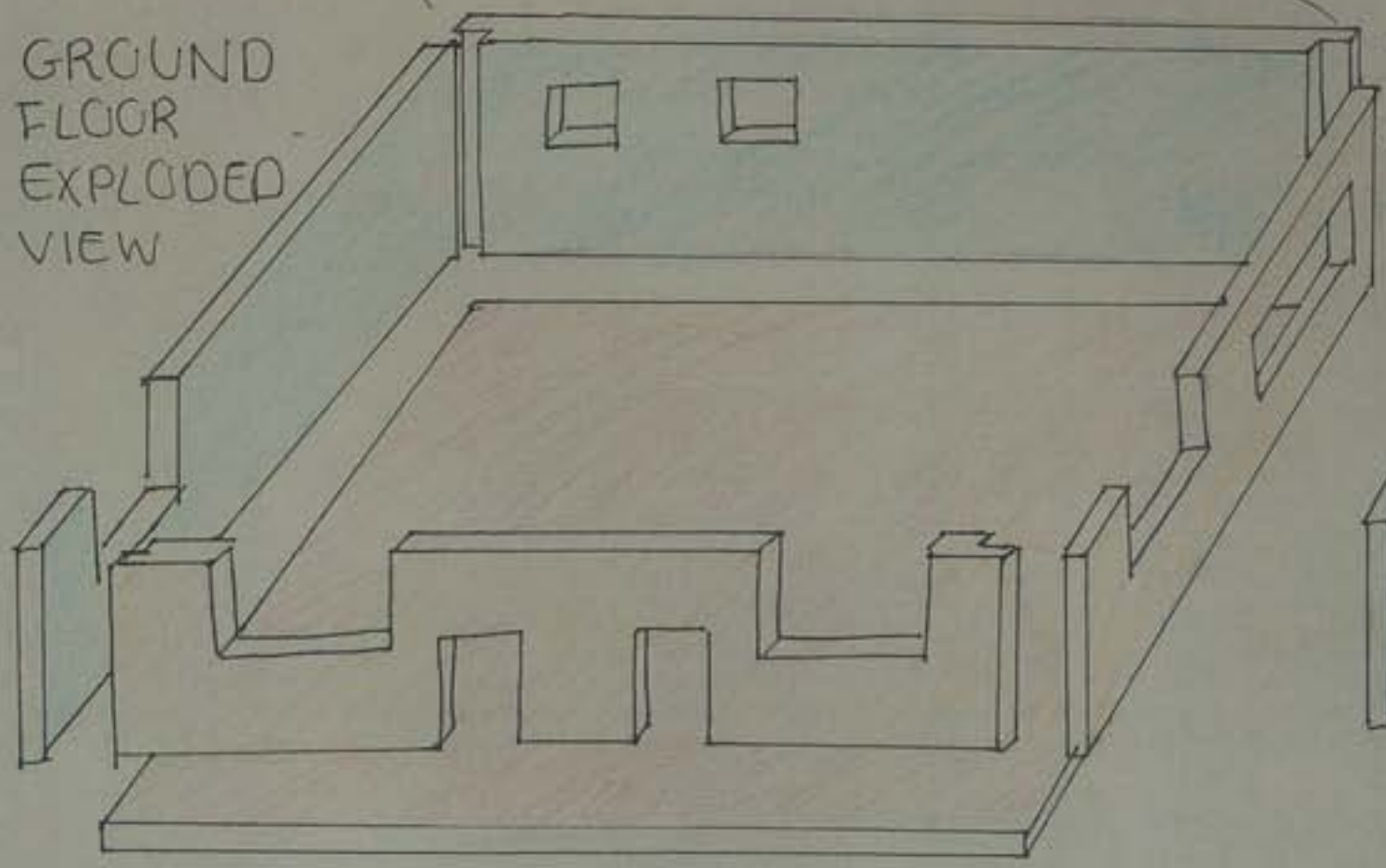
CUTTING LIST →

↳ THIS IS ONLY A CUTTING LIST FOR THE EXTERIOR AND INTERIOR WALLS, FLOOR, AND WINDOWS

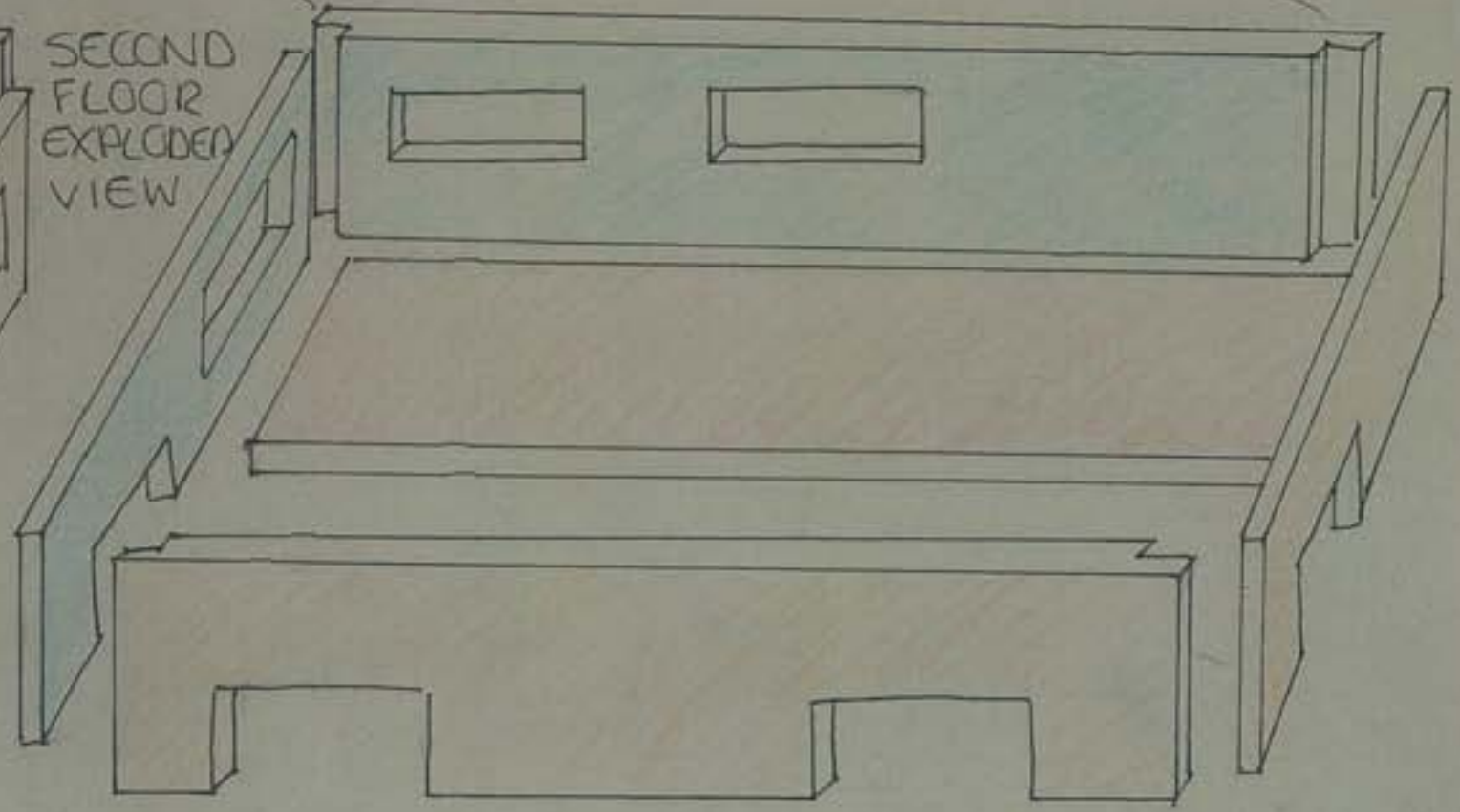
ATERIAL	LENGTH(mm)	WIDTH(mm)	THICKNESS(mm)	PURPOSE	QUANTITY
DF	490	380	9	Baseboard	1
DF	360	175	6	First floor	1
MDF	380	350	3	Roof	1
MDF	340	60	6	Walls	4
MDF	375	60	6	Walls	4
MDF	380	12	9	Roof edge	2
MDF	350	12	9	Roof edge	2
MDF	100	50	3	Solar panels	8
MDF	125	60	3	Toilet walls	1
MDF	110	60	3	Toilet walls	2
Laser Ply	360	330	1	Wooden Floor	1
Laser Ply	360	175	1	Wooden Floor	1
Clear Acrylic	70	70	3	Windows	4
Clear Acrylic	70	25	3	Windows	3
Clear Acrylic	15	15	3	Windows	2
Clear Acrylic	100	25	3	Windows	1

CUTTING LIST →

GROUND FLOOR EXPLODED VIEW



SECOND FLOOR EXPLODED VIEW



6TH FORM BLOCK DESIGN - PLANNING

Material	Components used in	Properties	Why has it been chosen?
Laser ply	Stairs (Each step was made from laser ply) Floorboards for both levels Shelves for storage room	Strong and stable due to the alternating grain Can be painted easily Cost effective Does not warp or distort Smooth surface finish Wide uses	I chose laser ply to make the floor boards because it was thin and would have the least impact on the resultant height of the walls. I could also use it in the laser so I could engrave floorboards into it to save me time. I used laser ply for the steps and shelves for the same reason, because it was thin and could be put into the laser for a precise, repeated shape.
MDF	Walls (both outer and inner) Roof and roof edges Baseboard First floor Benches for outdoors Outdoor fence Filing cabinets for offices	Dense material Excellent surface finish Easily veneered or painted Cost effective Comes in many sizes because it is manmade Can be cut easily, and due to it being manmade is not prone to warping or splitting. Produces a lot of dust when drilled, cut or sanded.	I chose MDF for the outer walls because it was cheap, and came in a range of thicknesses for inner and outer walls, It was also easy to handle, and has the best surface for painting. I used it for all the outside pieces of the building for the same reason.
Acrylic	Chairs and tables for downstairs Kitchen top Doors (outdoor and indoor) Windows Office walls Computers Computer chairs Toilets Sinks Toilet cubicles Lockers Mezzanine floor banister	Comes in a range of colours Stiff Hard Can be laser cut Durable Scratches easily Splinters easily	I used acrylic for the variety of colours it came in for many different components. It was also useful that it could be cut in the laser cutter as this allowed me to make precise and repeated shapes and cut them out quickly and accurately. I like the finish acrylic gives in a model as well, because it is shiny, although the ease of scratching did make me hesitate before using it.
Plywood	Computer desks Kitchen cabinets	Strong and stable due to the alternating grain Can be painted easily Cost effective Does not warp or distort Smooth surface finish Wide uses	I used ply wood because of its strength mainly. I liked the grain in the particular piece of plywood that I found. It made the kitchen cabinets look real as well, which is why I chose it for them.
Dowel	Computer desk legs Shelves for storage room Outdoor door handles Outdoor bench legs	Thin Comes in range of thicknesses Easy to paint Easy to cut	I chose dowel to do the legs of tables, benches and shelves because it is already the right shape to use and they are easy to cut to the same length.
Thin card	Stair case banister Sink for kitchen	Flexible Easy to cut and make holes in Comes in a range of colours Smooth finish – easily painted on	I chose thin card to make the banister because I needed a material that could bend easily and be cut easily. I needed to put holes in it, and card is more sturdy than paper yet still as flexible.
Cotton	Upholster sofas	Comes in a range of colours	I chose cotton because it came in the colour that I needed. It also allowed me to use fabric glue.
Copper rod	Tap for sink	Corrosion resistant	I used a copper rod because it was the easiest to keep bent in shape and look like a metal tap.
Expanded polystyrene/Styrofoam	Sofa shapes	Buoyant Lightweight Good insulator Can be cut easily Crumbles and breaks Melts easily	I used expanded polystyrene for the sofa shapes because of its light weight and ease of shaping in a curvy way, which I needed for the design of my sofas. Although the finish of it isn't good, I knew I was going to be covering it with fabric anyway so it didn't matter.
Mirrored acrylic	Toilet mirrors	Stiff Hard Can be laser cut Durable Scratches easily Splinters easily	I used mirrored acrylic because it is hard and durable, and can be used with a hot glue gun. I needed a mirrored effect, and this was the only material available which had a proper mirror effect.

6TH FORM BLOCK DESIGN - MATERIAL SELECTION

Time	1 hour	45 minutes	1 hour	30 minutes	10 minutes	20 minutes	20 minutes	10 minutes	45 minutes
Activity	Cut out walls including holes for windows and doors and cuts through the walls that can be lifted off each other, baseboard, floor and roof.	Make lap joints in walls and stick the walls together and to the floors where appropriate.	Put brick paper on all the outsides of the walls.	Make edges and solar panels for roof	Glue roof together and stick to the tops of the appropriate walls.	Paint inner walls	Make wooden flooring and stick down	Cut out shapes of sofas	Put material onto sofas and stick them down.
Tools	Band saw Sandpaper MDF	Router PVA Glue Sand paper	Brick paper Scissors Stanley Knife Cutting mat PVA Glue	Protractor Band saw Sand paper Paint	PVA Glue	Paint Paint brush	Laser cutter Computer Bands aw Sandpaper PVA Glue	Band saw Sand paper PVA Glue	Scissors PVA Glue Hot Glue gun
Health and Safety	Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade.	Always wear goggles and an apron when using the router, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the router bit.	When using the Stanley life make sure the cutting mat is underneath and keep your fingers out of its path, as well as anyone else's fingers. When done using the knife always retract it to make it safe for others when they need to use it.	Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade. When using the paint ensure it does not get into your mouth and eyes, and always wear and apron and lay down newspaper so as not to get paint on anything or anyone else.	Make sure to wear an apron when using the glue. Ensure that it does not get into your mouth or eyes and is not inhaled as this can cause health problems.	When using the paint ensure it does not get into your mouth and eyes, and always wear and apron and lay down newspaper so as not to get paint on anything or anyone else.	Make sure the lid of the laser cutter is shut when in use to protect mine and others eyes from the laser, and from the potentially poisonous gases being release. Also have the extractor fan on to try and get rid of these gases.	Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident.
Quality Control	Make sure the cuts are smooth and sanded down properly, with no sharp edges or splinters of wood sticking out. Make sure they are the correct size.	Make sure the joint is smooth and no parts of the walls stick out, and that they are glued together and clamped so that they are perpendicular and secure.	Make the sure the brick paper is cut to the exact right size of each wall, and that the edges of it are not tatty. Make sure it is glued down properly and any excess glue is wiped away.	Make sure the angles of the edges of the roof are right so it makes a perfect 90 degree joint. Make sure when painting there are no brush strokes to be seen so it dries smooth with out any blemishes.	Make sure there is no excess glue leaking out when gluing together, and make sure the glue is spread thoroughly in an even layer so that it sticks down properly.	Make sure when painting there are no brush strokes to be seen so it dries smooth with out any blemishes.	Make sure the laser has only engraved the material so that it looks effective as a wooden floor. Make sure it is glued down properly and fits in the room.	Make sure the curves of the sofa are smooth to match the design and are glued together securely.	Ensure the material is stuck properly down to the sofa shapes and that the joins in the fabric are not visible on the surfaces that will be seen.

6TH FORM BLOCK DESIGN - SCHEDULE

Time	20 minutes	45 minutes	20 minutes	10 minutes	20 minutes	1 hour	30 minutes	5 minutes	30 minutes
Activity	Cut out legs and surfaces of the tables and chairs	Stick table and chair components together and stick down in place.	Cut out kitchen unit surface and drill and hole in it for the sink.	Make the kitchen units	Cut out parts for lockers and stick together and stick down.	Cut out components For sinks, toilets, urinal and cubicles	Stick together and stick down the toilet components.	Make mirrors for toilets	Make desk tops
Tools	Laser cutter Computer	Tensol cement Hot Glue gun	Band saw, pillar drill, pliers, glue gun, paper	Band saw Glue gun Paint Sand paper	Laser cutter, Computer, Tensol cement, hot glue gun	Laser cutter Computer	Tensol cement Hot glue gun	Band saw Disc sander Hot glue gun	Band saw Disc sander
Health and Safety	Make sure the lid of the laser cutter is shut when in use to protect mine and others eyes from the laser, and from the potentially poisonous gases being release. Also have the extractor fan on to try and get rid of these gases.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident. Make sure the Tensol cement does not get onto the skin as it will cause irritation; use a piece of long dowel to apply the adhesive.	When using the pillar drill always wear goggles and have the safety guard down before starting to drill. Clamp the material down to stop it moving, or getting caught in the drill and hitting you or anyone else nearby. Make sure only you are in the area round the pillar drill when turning it on.	Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade. When using the paint ensure it does not get into your mouth and eyes, and always wear and apron and lay down newspaper so as not to get paint on anything or anyone else.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident. Make sure the Tensol cement does not get onto the skin as it will cause irritation	Make sure the lid of the laser cutter is shut when in use to protect mine and others eyes from the laser, and from the potentially poisonous gases being release. Also have the extractor fan on to try and get rid of these gases.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident. Make sure the Tensol cement does not get onto the skin as it will cause irritation.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on.	Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade. Do not put your fingers near the sander when turned on.
Quality Control	Make sure the legs fit together securely and hold up the tops of the tables and chairs, and make sure they look in proportion.	Make sure the Tensol cement does not get onto the surface of the acrylic as it will melt it. Make sure no blobs of glue gun glue are visible once stuck down.	Make sure the Hole for the sink is the right size in proportion with the size of the units and that the edges of the surface are neat.	Make sure the fridge is painted on neatly and no whit paint gets anywhere else on the wood. Make sure the units are a consistent height and the grain of the wood I the right way.	Make sure the Tensol cement does not get onto the surface of the acrylic as it will melt it. Make sure no blobs of glue gun glue are visible once stuck down.	Make sure the laser has cut all the way through the material before moving it out of place in the laser cutter.	Make sure the Tensol cement does not get onto the surface of the acrylic as it will melt it. Make sure no blobs of glue gun glue are visible once stuck down.	Mae sure the edges of the mirrors are straight and that there are no scratches on them – do not take the protective plastic off until the end.	Make sure all the tops are the same size, and have smooth edges.

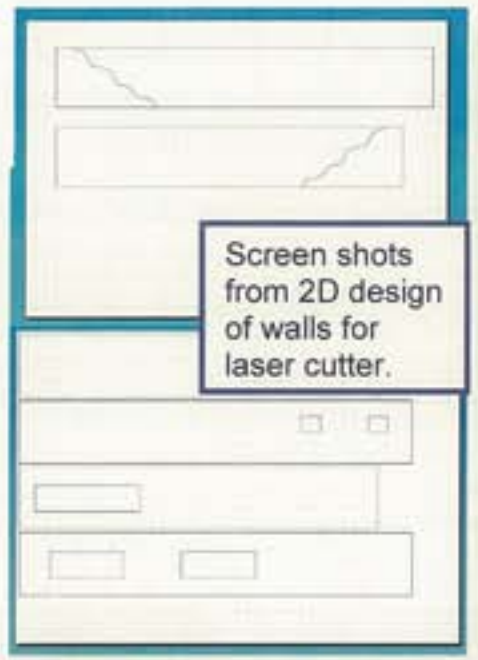
6TH FORM BLOCK DESIGN - SCHEDULE

Time	30 minutes	30 minutes	30 minutes	10 minutes	20 minutes	30 minutes	20 minutes
Activity	Make 4 legs for each desk top ad glue them on, then glue the tables down.	Cut out components for the computer chairs and stick together and down.	Cut out components for the computers and stick together and down.	Make banister and stick on.	Cut out parts for shelves, stick together, pant and stick down.	Cut out parts for filing cabinets, stick together, paint and stick down.	Cut out windows and stick in.
Tools	Band saw Hot glue gun	Laser cutter, computer, hot glue gun, Tensol cement.	Laser cutter, computer, hot glue gun, Tensol cement.	Laser cutter Computer Hot glue gun	Band saw Paint Hot glue gun	Band saw Paint Hot glue gun	Laser cutter, computer Hot glue gun
Health and Safety	Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade. When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin.	Make sure the Tensol cement does not get onto the skin as it will cause irritation; use a piece of long dowel to apply the adhesive. Make sure the lid of the laser cutter is shut when in use to protect mine and others eyes from the laser, and from the potentially poisonous gases being release. Also have the extractor fan on to try and get rid of these gases.	Make sure the Tensol cement does not get onto the skin as it will cause irritation; use a piece of long dowel to apply the adhesive. Make sure the lid of the laser cutter is shut when in use to protect mine and others eyes from the laser, and from the potentially poisonous gases being release. Also have the extractor fan on to try and get rid of these gases.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident. Make sure the lid of the laser cutter is shut when in use to protect mine and others eyes from the laser, and from the potentially poisonous gases being release. Also have the extractor fan on to try and get rid of these gases.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident. Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident. Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade.	Make sure the lid of the laser cutter is shut when in use to protect mine and others eyes from the laser, and from the potentially poisonous gases being release. Also have the extractor fan on to try and get rid of these gases. When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident.
Quality Control	Make sure the legs are stuck on straight so the desks all stand up properly. Make sure no blobs of glue gun are visible.	Make sure the laser has cut all the way through the material, and not to get any of the glue on a visible surface as it will reduce the quality of the finish	Make sure the laser has cut all the way through the material, and not to get any of the glue on a visible surface as it will reduce the quality of the finish	Make sure that the line of glue form the hot glue gun is straight and neat and even, as it will be visible through the clear acrylic.	Make sure there are no brush strokes visible form the paint, and that there are no blobs of glue gun to be seen.	Make sure there are no brush strokes visible form the paint, and that there are no blobs of glue gun to be seen.	Make sure the laser has cut all the way through the material before moving it, and that it fits into the window frames properly, and make sure there are no visible blobs of glue gun glue.

6TH FORM BLOCK DESIGN - SCHEDULE

Time	30 minutes	30 minutes	20 minutes	20 minutes	30 minutes	10 minutes	5 minutes
Activity	Cut out window frames and stick in	Make all the doors and stick them into place, some open, some shut	Make the steps for the stairs	Stick steps to central pole	Cut out and make holes in banister	Paint banister and stick to the stairs.	Glue stairs into place on bottom floor.
Tools	Laser cutter, computer Spray mount	Band saw Hot glue gun	Band saw	Hot glue gun	Scissors Compass Blue tack	Hot glue gun Paint Paint brush	Hot glue gun
Health and Safety	Make sure the lid of the laser cutter is shut when in use to protect mine and others eyes from the laser, and from the potentially poisonous gases being release. Also have the extractor fan on to try and get rid of these gases. Make sure to use spray mount in an open, well ventilated room and not close to anyone else. Try not to inhale much of it.	Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade. When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident.	Always wear goggles and an apron when using the band saw, and check the area is clear of other people before turning it on. Beware of long hair or clothing getting stuck in the machine, and be careful when putting fingers near the blade.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident.	When using the compass to put holes in the banister, make sure the blue tack is behind the material and the compass is out of the way of yours or anyone else's fingers. When using scissors also keep your hands out of the way of the path of the scissors, and carry them point down, and always keep the blades together when not in use.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident. Wear an apron when painting and lay down newspaper and keep the paint brush away from anyone so as to not get the paint on anything.	When using the hot glue gun, be careful not to touch the glue until it has dried, or the tip of the gun to avoid burning skin. Leave it in the correct position when not in use, to make sure no one else burns themselves by accident.
Quality Control	Make sure the frames are stuck on securely to the building, and straight, covering the edges of the windows and brick paper.	Make sure there are no blobs of glue gun glue visible, and make sure the edges of all the doors are straight and fit snugly into the frames.	Make sure all the steps are exactly the same size, and the grain of the wood goes the same way on each of them.	Make sure the stairs are the same height apart and sweep round the pole in even gaps, so there are no big jumps or some steps with hardly and space on them.	Make sure the line cut by the scissors is straight and neat, and the holes are in regular intervals.	Make sure there are no visible brush strokes, and no visible blobs of glue gun glue. Make sure the banister is stuck on so that it forms a smooth curve up the stairs and is at the same point on each step.	Make sure there are no obvious blobs of glue gun glue. Make sure that the stairs reach and touch the designated space on the first floor, but do not catch on it when it is removed.

6TH FORM BLOCK DESIGN - SCHEDULE



Screen shots from 2D design of walls for laser cutter.

Using the router to create lap joints to join the walls.

Lap joint

Filing the holes for windows and the cuts in the upper floor walls.

Bottom floor put together with lap joints. Complete.

Using band saw to cut out shapes in MDF.

Complete ground floor and sections of second floor walls.

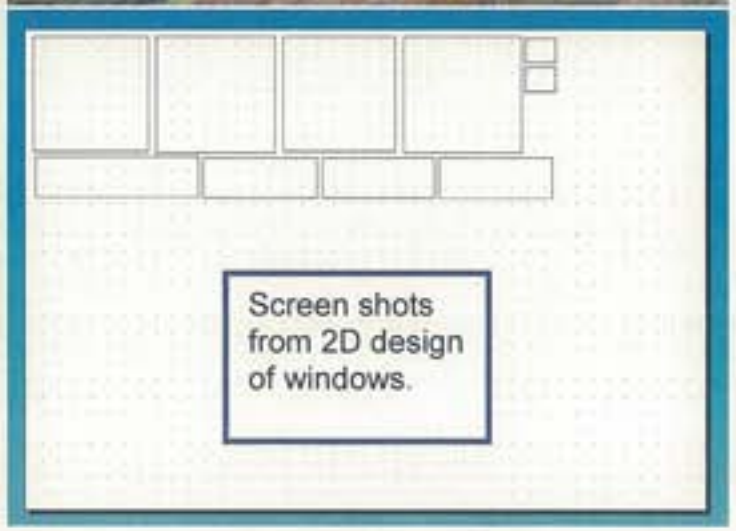
Completed walls, with holes for windows and doors.

What the shell of the model will look like when roof is taken off.

Ground floor painted, stuck to base board and covered with brick paper.

Completed shell of building painted, covered with brick paper plus roof.

Interior shell of building with 1st mezzanine floor added.



Screen shots from 2D design of windows.

6TH FORM BLOCK DESIGN - MAKING

Me painting the ceilings of the building.

Me using Stanley knife and cutting mat to cut out brick paper.

Me gluing windows in place using a hot glue gun.

The toilet walls painted and being clamped together whilst the PVA glue dries.

Cutting out acrylic to make doors on the band saw.

Basic shape of sofas before fabric is added.

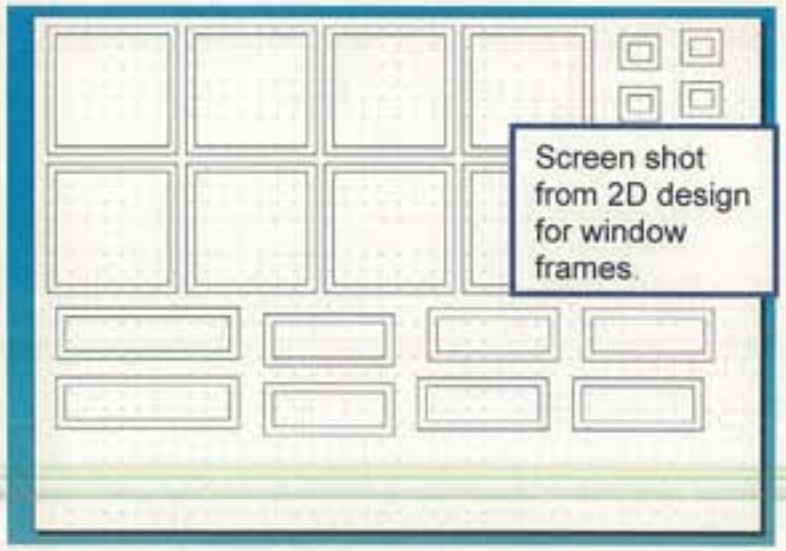
Making holes in card for banister for stairs using a compass.

Using the disc sander to smooth the edges of the clear acrylic.

Using the band saw to cut out high density polystyrene for sofas.

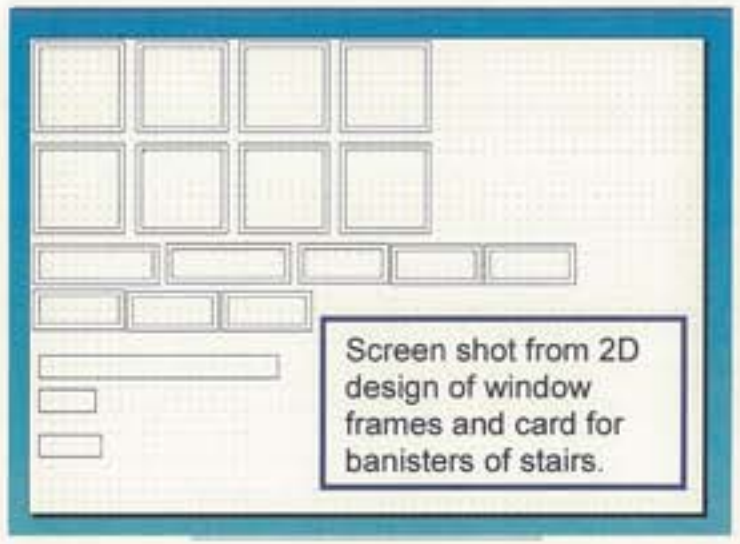
Using the laser cutter to cut out components for toilets.

Screen shot from 2D design for interior glass wall for offices.

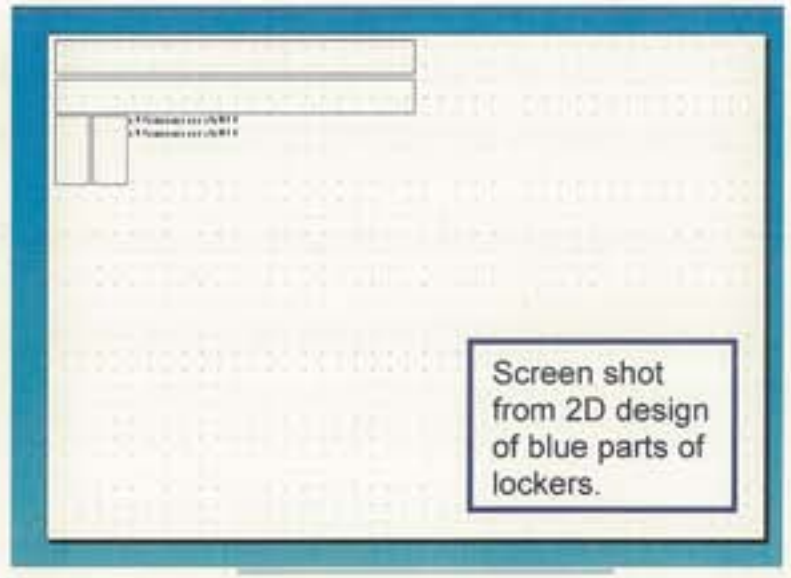


Screen shot from 2D design for window frames.

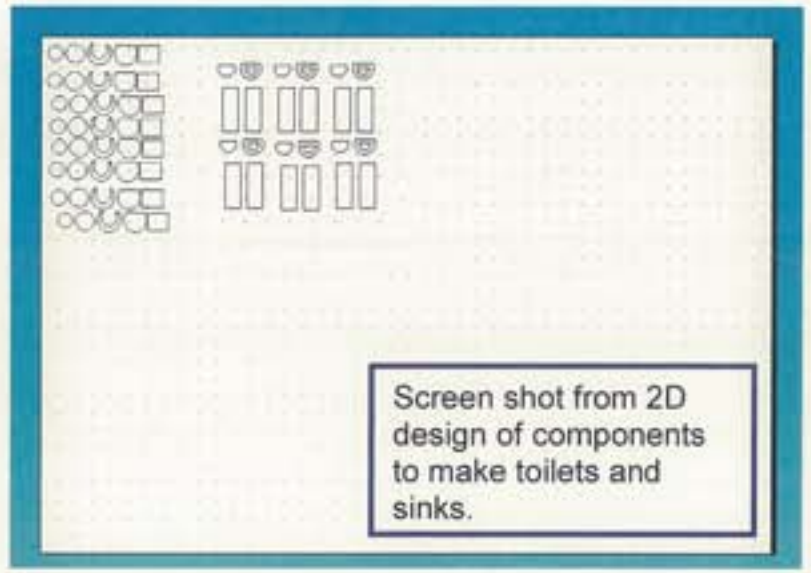
6TH FORM BLOCK DESIGN - MAKING



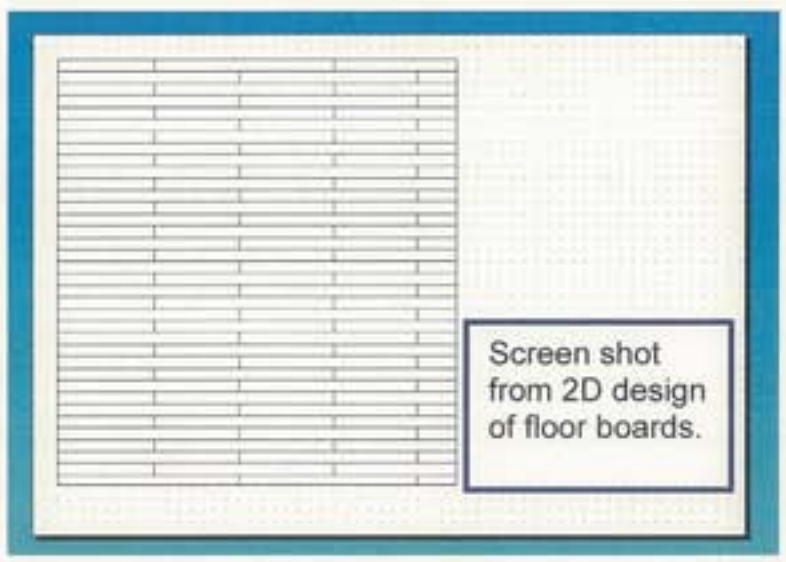
Screen shot from 2D design of window frames and card for banisters of stairs.



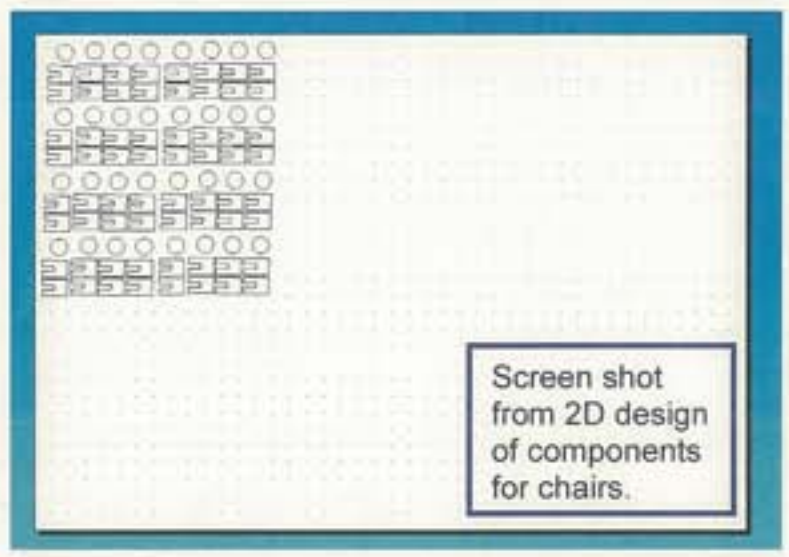
Screen shot from 2D design of blue parts of lockers.



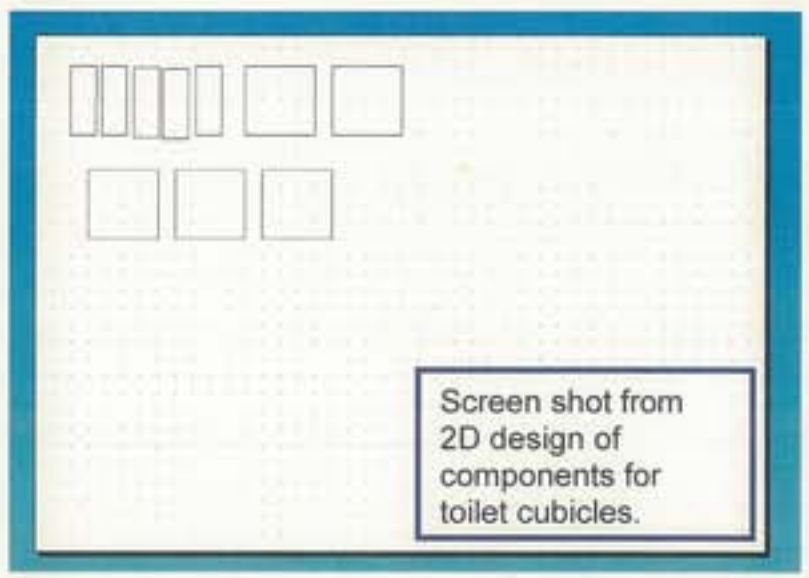
Screen shot from 2D design of components to make toilets and sinks.



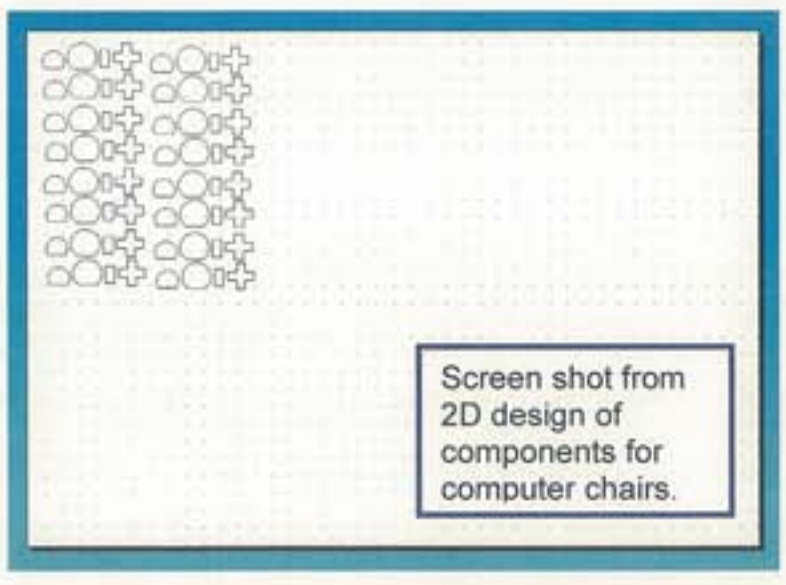
Screen shot from 2D design of floor boards.



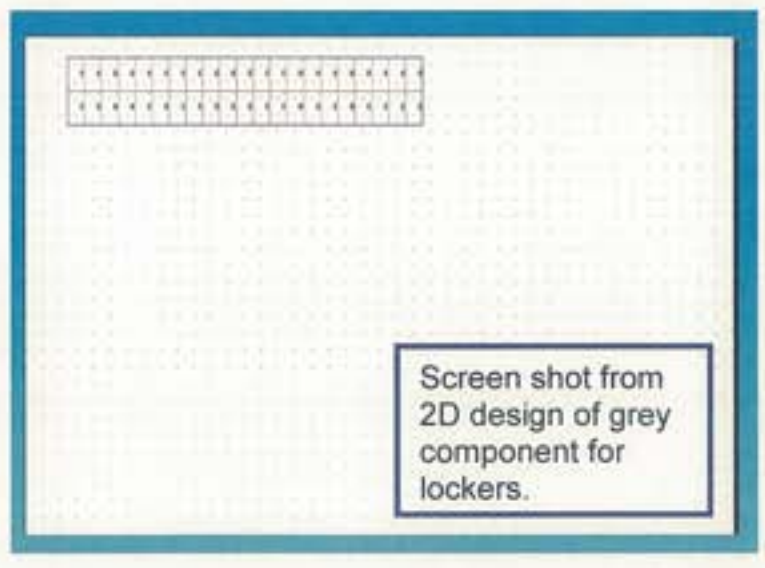
Screen shot from 2D design of components for chairs.



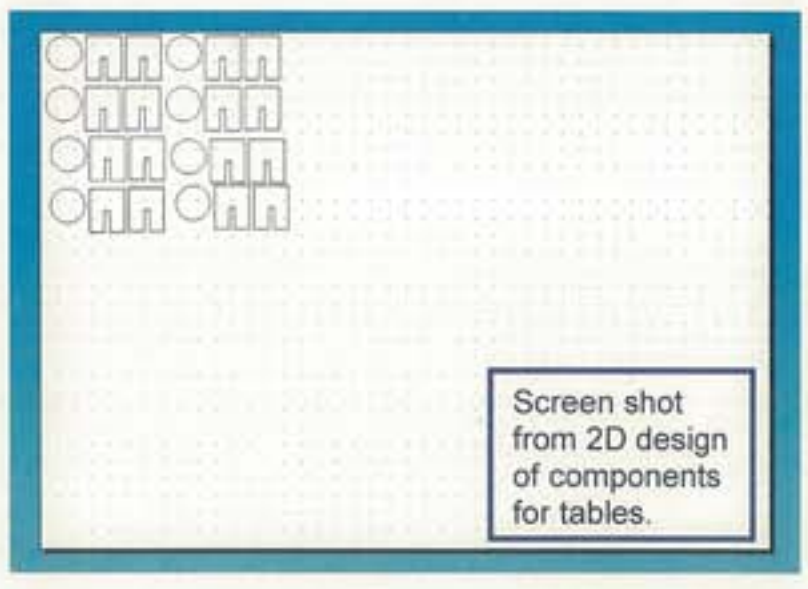
Screen shot from 2D design of components for toilet cubicles.



Screen shot from 2D design of components for computer chairs.



Screen shot from 2D design of grey component for lockers.



Screen shot from 2D design of components for tables.

6TH FORM BLOCK DESIGN - MAKING

pecification Point	Testing – How and Why?	Results	Evidence
. The 6th form block must fit ıto the space allocated into ıe school and cannot get any bigger.	To test this specification point I will measure the model and use the scale to work what size it would be in real life. This is to find out if the building is the right size and would fit into the school when built.	From the results of the test I found that the design fitted perfectly into the space, as I measured the space form the beginning and did my designs aroud that. It uses all of the space available, and makes the most of it, and therefore meets my specification.	
2. The 6th form block must have enough space for around 200 students plus space for 6 members of staff to register and 2 members of staff to have a base.	To test this specification point I will create a scale model of a person and see how well it fits into the block, and how may of them would realistically fit in. this is to see from my model a true perspective of how people would fit in rather than just looking at it and guessing.	From this test I have found that there will be plenty of room for that many students, as long as they are spread about and not all needing to use the same area at once. So aslong as that doesn't happen, it meets my specification.	 
3. The 6th form block must look modern. With this it must use a modern colour scheme that's young and contemporary with modern materials to go with it.	To test this specification point I will ask my client and a 6th former what they think to the look of design, and whether they think it is modern in there opinion or not. As they will be the ones who are using it, this will be the best way of testing this point.	Client – I think that it looks very modern, the technology included is great and I think the stairs, the glass banister on the mezzanine floor, th curvy sofa and way the seating is arranged all make it a modern design. 6th former – I think that the design is very modern. Everything about it, the light colours, the use of wood, glass and metal together makes it feel like avery modern space.	 
4. The 6th form block must feel light and airy, not dark and dingy. There must be plenty of natural light in the room.	To test this specification point I will put the lid on the model and see how much light gets in through the windows. This is to see in real life how much light would get in, but I have to take into account because it is a small model and the windows are small, this may affect the results.	Not much light seemed to get in when I did this test, looking through the windows it seemed to be quite dark, which means I failed ot meet this specification point, however I feel in life size with the size of the windows, there will actually be a great dal of natural light, so meets my specification.	 
5. The 6t form block must have two floors for more space, to allow the 6th form to expand.	To test this specification point I will count the number of floors. If there are two, then it will meet the specification point, and there will be a lot of space for everyone.	There are two floors, how ever the first floor is only half of one. This is not a problem though, as this is all the space that was required, and therefore space is not wasted. However because it is only half a floor, it does not fully meet my specification.	
6. The 6th form block must have a feature in it.	To test this specification point I will ask both a 6th former and a client if they can identify a feature in this design. This is to see if there is an obvious feature, and if they cannot find one, even if I, the designer think there is one, the design will have not met the specification point.	Client – The feature is clearly he stair case, which is a quirky shape and made of modern materials, however I think that the glass banister on the mezzanine floor could also be part of that feature. 6th former – I think the most feature-like thing in this design is the stair case because it is different and unique. Overall it meets my specification.	

6TH FORM BLOCK DESIGN - TESTING

pecification Point	Testing – How and Why?	Results	Evidence
. The 6th form block must ıclude a separate study area nd social area.	To test this specification point I will ask a client and a 6th former if is they think they are separate, after all it is them who are using it, and most of all, the client is the head of sixth so it is mot important for her to think they are separate.	Client – They are on separate floors which I think is sufficient seperation for the 6th formers to work effectively under. 6th Former – I think that the areas are separate because they are on different floors, although if you were working you would still be able to hear the relaxing area. Overall, it neets my specification.	
8. The 6th form block must include a kitchen area, toilets, lockers, offices, an outdoor area and a storage facility.	To test this specification point I will check all these areas are included in the design and photograph them as evidence. This is to show all the areas needed for the 6th form block to function are there.	They are all there, in seperate areas of there own. None of them are mingled togther, so they are very seperately definaed areas. This meets my specification point.	 
9. The second floor must be at a height where it leaves plenty of room underneath.	To test this specification point I will use my scale model of a person and put them underneath the mezzanine floor and measure how much room they have above their head. This is to see if there would be enough room in real life so it feels spacious.	.From this test I found that there was plenty of room underneath the floors. In the model, withou the scale person it looks as if it would be closed in when in catualy fact there is a generous amount of room avobe head height which would make it feel more open, howevr it might be dark under there, but it still meets my specification point.	
10. Although the 6th form block must look good, it also must look predominantly like a work place as that is its main purpose.	To test this specification point I will ask my client to give her opinion on whether it is more a work space or a relaxing area, and what could be done to improve. This is because she is in charge of the area, and has the most important opinion of the work space.	When I asked te ehad of 6th form what she though, she said that the study area was immediately visible when entering the block so was happywith that, but felt that it didn't feel likeonly a work place, but a building of many functions wher there obviously could be a lot of work getting done, but also an area where the students feel they can relax rather than having everyhting focused on work. While this doesn't meet my specification, I am happy with it.	
11. The 6th form block must have an alternative sustainable power source as part of it to provide some of the power needed to run it. As well as this the materials used should try to be sustainable.	To test this specification point I will look for an alternative source of power, and evaluate how effective it would be. I will also look at the materials used to see how sustainable they are. This is to see how sustainable in general the design for the 6th form block is.	There are solar panels on top of the roof, which is flat, so they will catch rays of sun for as long as it is out. There are eight large solar panels, which will produce a large proportion of the blocks energy. Wood has been used through out, which is a sustainable material as I is renewable however there are a lot of plastics, which are not biodegradable, but if recycled arguably are sustainable because they can be melted down and reshaped. So I think it does meet my specification point.	

6TH FORM BLOCK DESIGN - TESTING

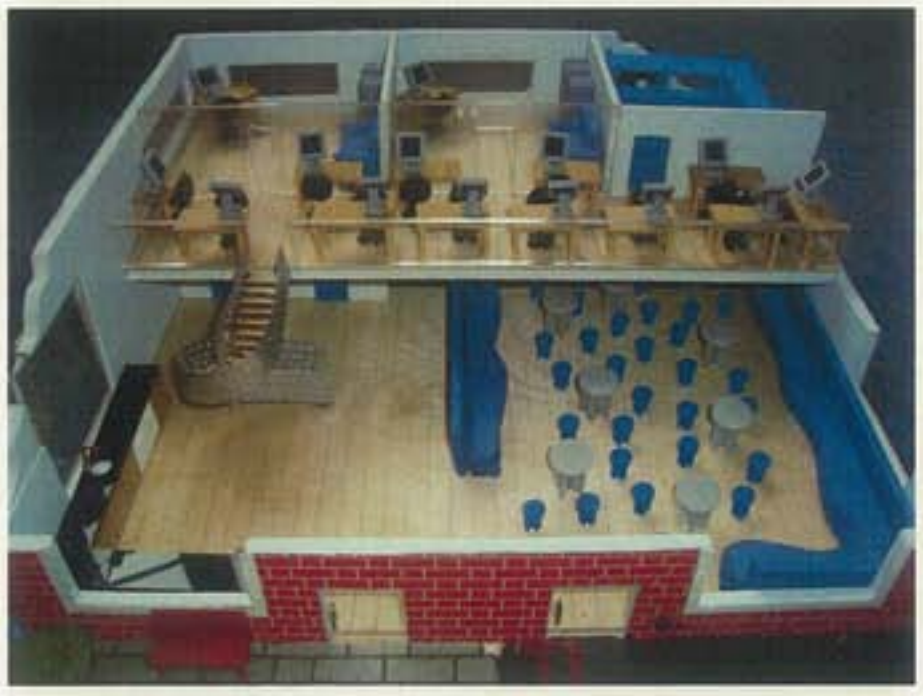
EVALUATION

Over all i am very happy wth how this project has gone. My final design has come out exactly the way i wanted it to, and the model looks really good. The design fit exactly into the space allocated, meaning it is a feasable design to be pitched to the board of governers (which is part of my 2D element). Within this, although there was a limited amount of space it manages to create enough space for everyone in the 6thform (incuding staff) to use it, using a mezzanine first floor covering half the ground floor area as a working space, to create a larger, more open relaxing space downstairs to make it easier for the students to relax, yet seperates the two areas from each other so that people who want to work can concentrate and not get disturbed by anyone talking. As well as this, the teachers can keep an eye on those students who are doing work to make sure that they aren't getting distracted. In the teachers offices, which they now have two of instead of the orignial one, they have a lot of natural light getting into their rooms through windows and the glass wall (which enables them to wathc the students). As well as in the offices, the whole block gets plenty of natural light in it with 4 large windows which cover both the ground floor and first floor walls. As a feature, I feel that the staircase is good as it looks great and it's a good focal point in the room, but is also very functional, as it allows students to go up and down it at the same time as it has wide steps, yet is an interesting and unique shape.

As a student I feel that the sixth form block would be very easy to use and that everyone would like the modern, sleek design of it.

CLIENT OPINION

"I really like the design for the 6th form block. I feel that in terms of function, it could easily be built and used. I like the fact that i have been able to add input on the project since the beginning, this has enabled me to tune the design so it would be as appropriate as possible. I think that as a teacher, being able to watch the students work, yet be in an entirely seperate room is a useful addition. I also am pleased that there is a great deal of designated work space seperate from the relaxing/social area as it will allow students to get on with their work without distraction. My only worry with this would be that the entire of the downstairs is purely for relaxing, and maybe this would discourage students from coming upstiars and working, and there would be no way for me to check on this as I would be situated upstiars. However the way the tables and chairs are arranged downstairs would allow for students to do work on thems during their free periods, but also relax if they want to."



MODIFICATIONS

Whilst making my model, I found that i needed to make quite a few changes to the design in order for it to work as intended.

For the staircase, I had originally planned for the steps to be made out of maple wood and the banister to be clear acrylic wrapped round (I had planned to soften the plastic in an oven and let it cool in a curved shape) however I found that this would not be possible as it would not bend the way I wanted it to, so I had to compromise and change it to an aluminium banister with holes in all the way up to keep the light coming in on the stairs. I did this by spray painting card silver, putting holes in it and bending it up the curve of the stairs.

Whilst i planned on making a pillar to hold up the middle of the mezzanine floor level, when i made it i found that the toilets went far enough acorss to support it sufficiently, and that plus the steel bean that would be going all the way across the edge of the mezzanine level, holding it up, would be enough support.

I also had orginally planned to have laminate flooring a similar, but lighter colour to the walls, which is commonly found in schools. However, this was difficult to find and model, so i decided a wooden floor would be better in terms of modelling and for the actual design as it looks more proffessional and like a lot more money has been spent on it.

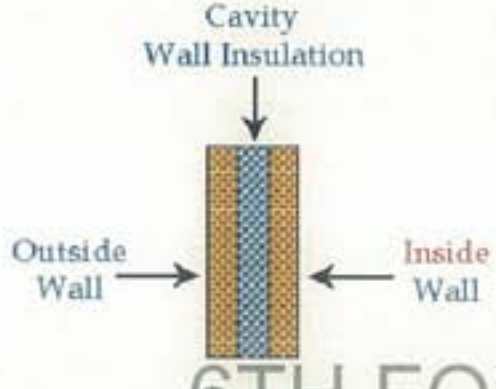
I am going to do a life cycle assessment on my sixth form block design; with what it would be a real life rather than my model. This will give a clear picture of what effect it would have on the environment if built, and whether it could be classed as a sustainable building.

SUSTAINABLE MATERIALS

For the lockers, uPVC would be used, a type of thermoplastic with useful properties. As a thermoplastic, it can be recycled by being melted down, however this is expensive and not a widely done thing at the moment, and mot things made from this just end up on the landfill, where it is not biodegradable so will just sit there forever. However, it has very good properties, and these outweighed the fact that it wasn't very sustainable, so I decided to use it.

I also used ABS for the tables and chairs in the downstairs seating area, as well as the upstairs computer chairs. ABS is also a thermoplastic, and the same applies for it as for uPVC, so is unfortunately not very sustainable.

Throughout the building, for the flooring, the shelves and the stairs, I have used maple wood. Maple wood is a hard wood and therefore its tree takes a long time to grow, so when it is cut down it takes a long time to replace. However, the forests are being protected and for one tree cut down another one or two is planted in its place. So using this wood is sustainable, but not as sustainable as using a manmade wood such as MDF or softwood. The kitchen units however are made of MDF laminated with a thin layer of maple so it appears as if it is made from it.



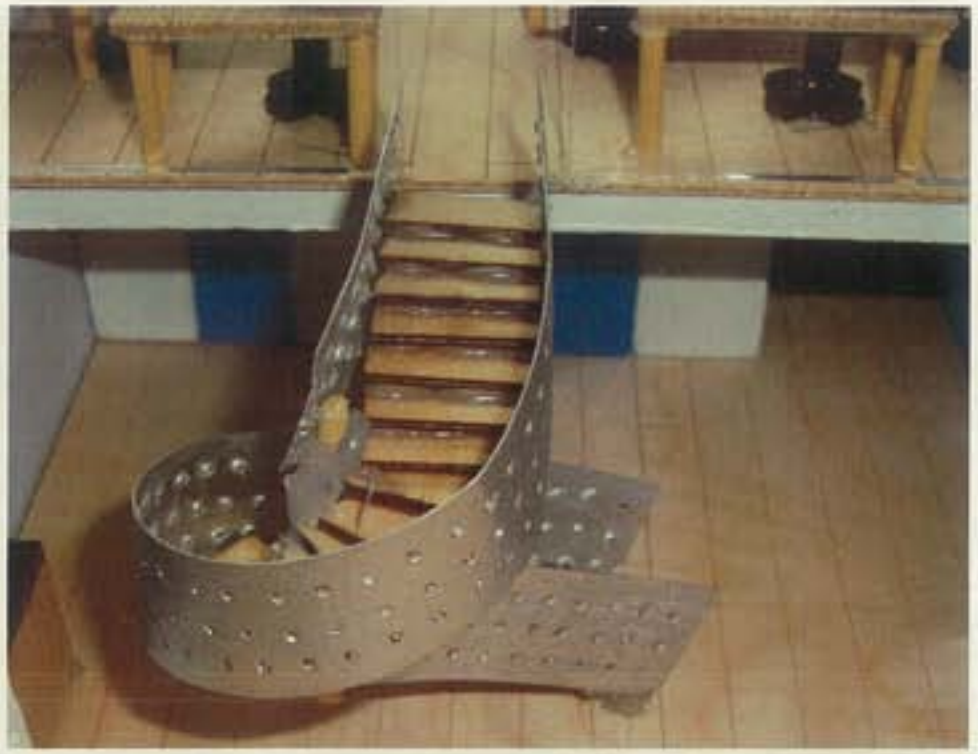
The way the building would be built, with the outer layer of bricks and an inner lay of bricks, with cavity wall insulation in between, would mean that the building would not lose as much heat, and would therefore not require heating the building using fuel as much. This, as well as butting the cost, is a sustainable solution to energy problems.

SUSTAINABLE ENERGY SOURCES

When i first carried out my research into sustainability, i decided that adding a solar panel (photovoltaic cell) or a small sized wind turbine would be a good way of making the design sustainble, as they would provide an alternative, clean energy source to the building. In my final design i decided that the roof would be flat, so using solar panels made the most sense to use as i had a large, flat, unusable surface. Therefore, i designed it to fit 8 large photovoltaic cells ontop of the roof, to provide as much energy as possible for the 6th form block. Hopefully it will produce all the power needed, but on days where it doesnt (due to adverse weather conditions) it can use the regular school supply, and on days where it over produces some can be transferred to be used in the rest of the school. There will not be the problem of it being dark at inght time, becasue the school is only rarely used in the night.

Over all, in terms of materials, my design is not sustainble. This is primarily due to the use of plastic which is arguably hard to recycle, and does not biodegrade, and takes a lot of energy and involves releasing a lot of harmfuil toxins into the atmosphere and environment to make. The use of a lot of hard wood is also not sustianble because it involves cutting down the rainforests when we need them most, spoiling habitats and putting animals existances in danger. However, in terms of alternative energy supplies and consrving nergy by using an energy smart design, it is very sustainble.

6TH FORM BLOCK DESIGN - LIFE CYCLE ASSESSMENT



6TH FORM BLOCK DESIGN - FINISHED MODEL

6TH FORM BLOCK DESIGN - FINISHED MODEL

2D Specification

rm

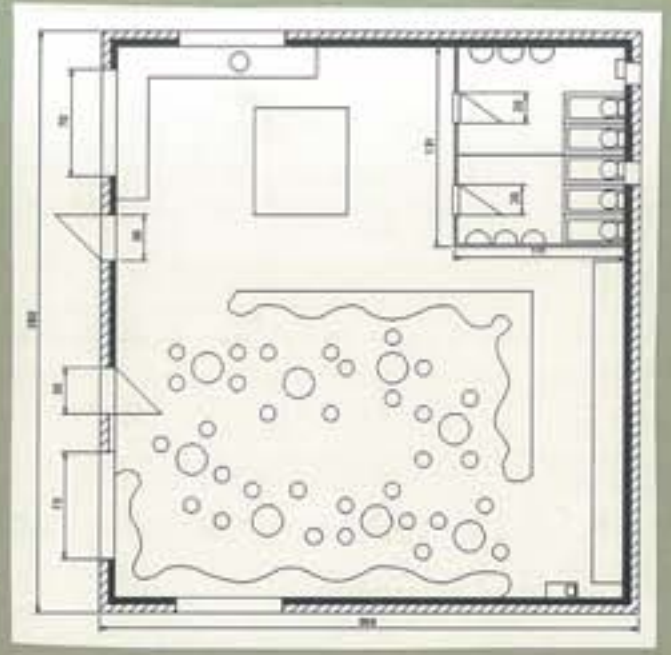
- The presentation board must look attractive.
- The amount of text on the board must be minimal so it is not clogged up.
- The board must include all the drawings required to show off the design.

Function

- The presentation board must show off the 6th form block in a way that will persuade the board of governors for the school to chose it, so it will be chosen to be made.

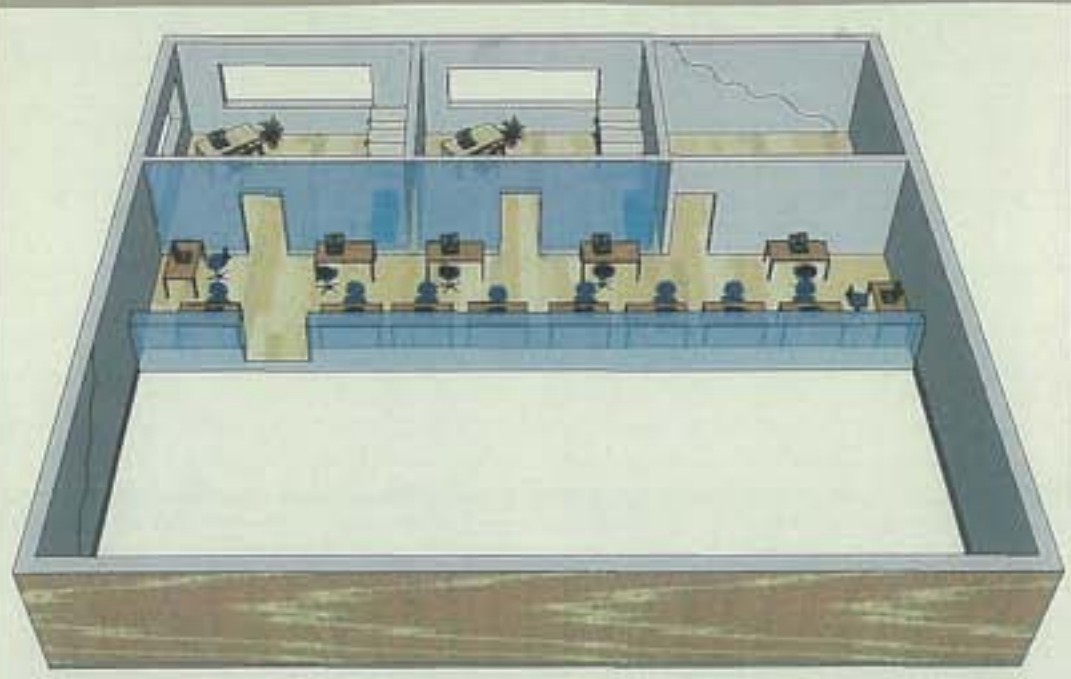
User requirements

- The presentation board must be easy to read and understand so that my final idea looks clear.
- The font on the presentation board must be a good size that can be read from quite a distance away from the actual board.



The pictures that must be included are the ones on this page. A 3D drawing of both floors and a floor plan with basic measurements

Below are different colours for the title of the presentation board.



1 Branston Sixth Form

2 **Branston Sixth Form**

3 Branston Sixth Form

4 Branston Sixth Form

5 *Branston Sixth Form*

6 **Branston Sixth Form**

Above are possible fonts to use for the text. No 1 is too simple, No 2 is just right, No 3 is too childish, No 4 is good, No 5 is too informal, and I do not like No 6.

Branston Sixth Form

Branston Sixth Form

Branston Sixth Form

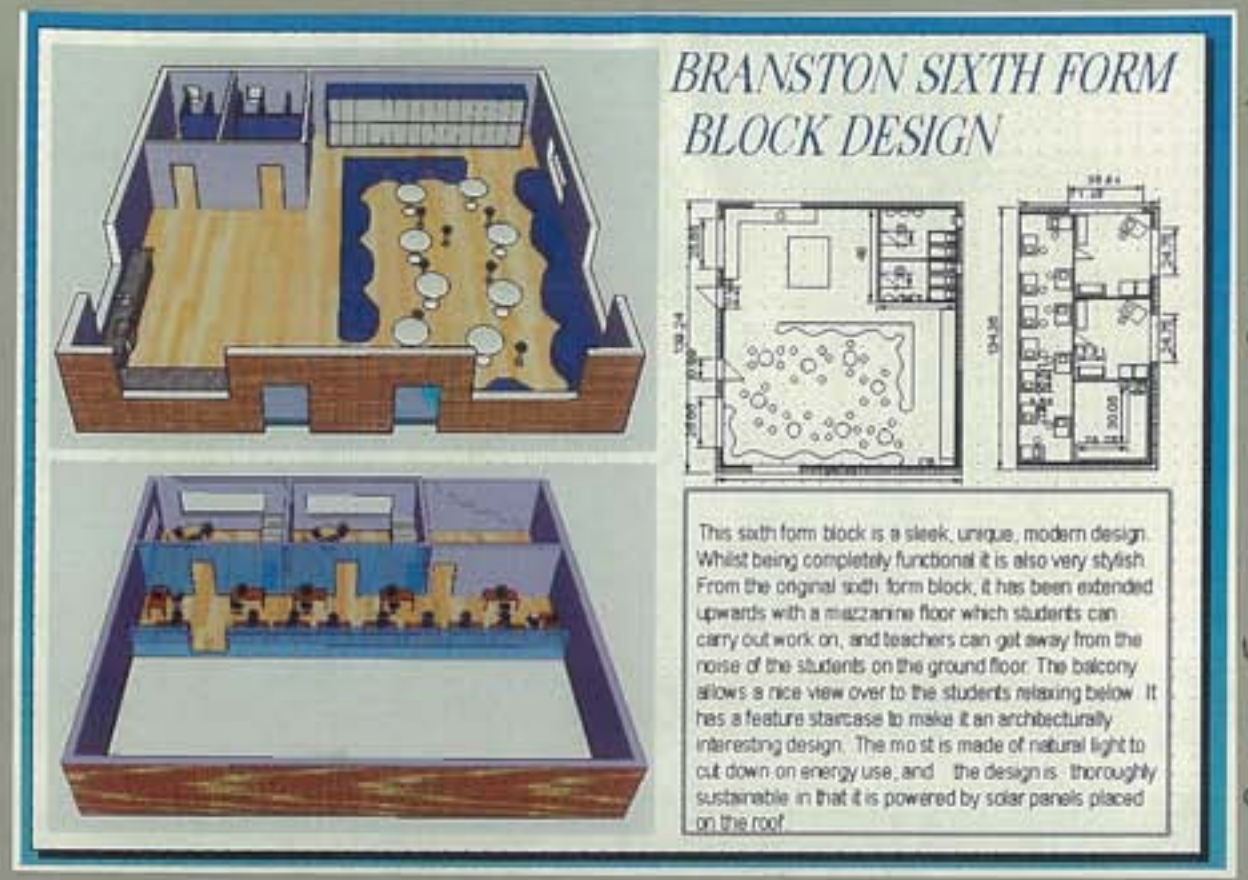
Branston Sixth Form

Branston Sixth Form

Branston Sixth Form

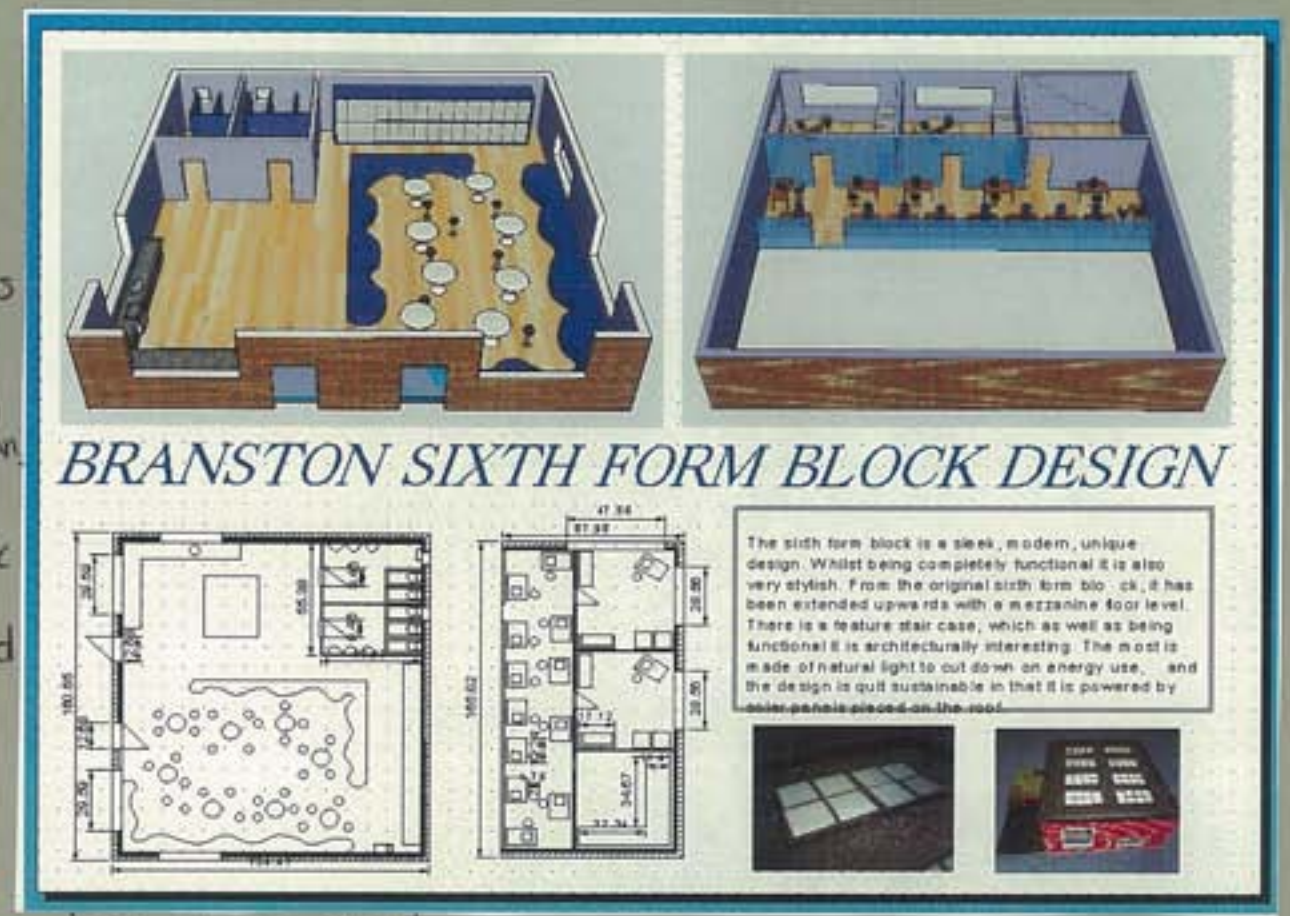
Above are the chosen font and colour in bold and italic. I have chosen to use italic.

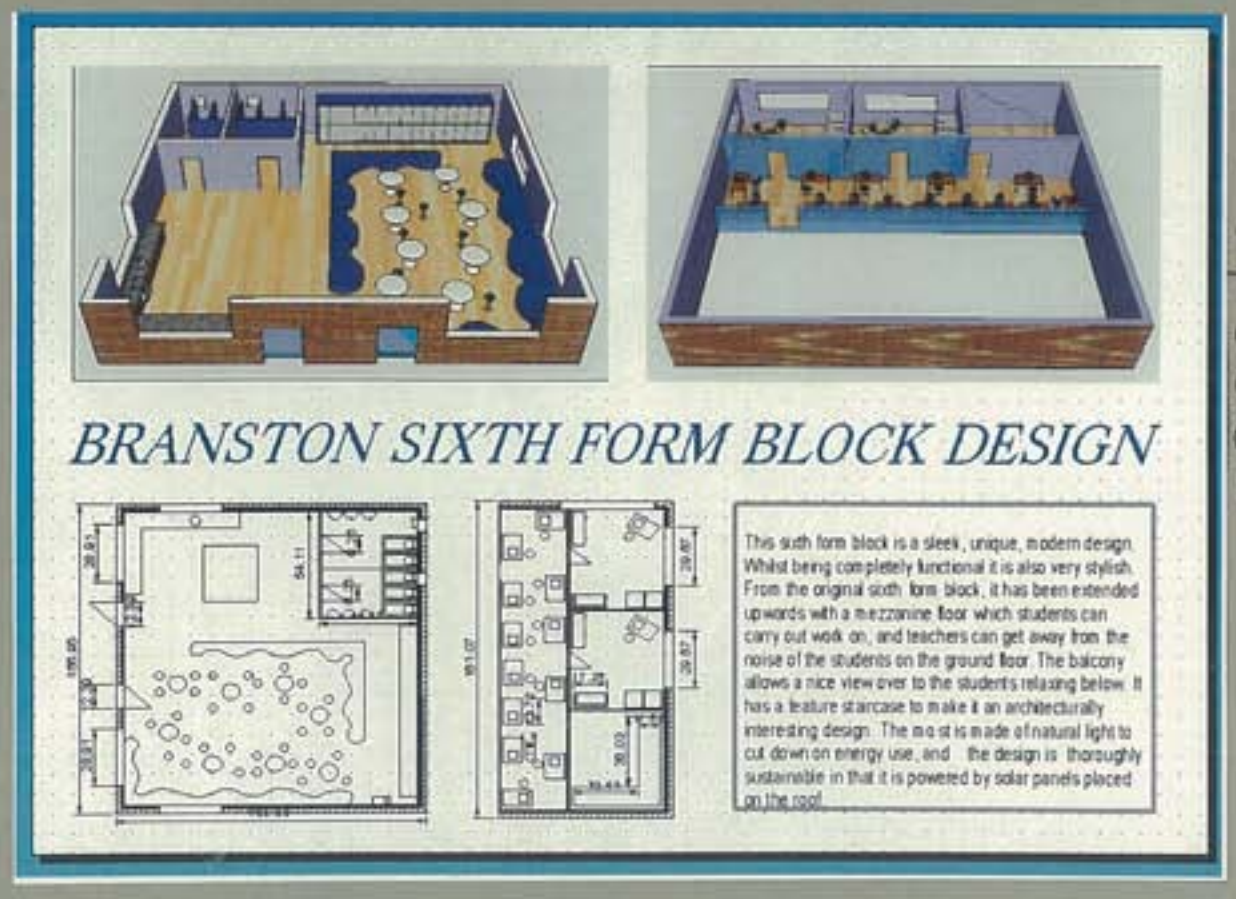
6TH FORM BLOCK DESIGN - 2D ELEMENT



Design 1

This design is good because you can see the levels of the building clearly as they are in a column. However I do not like it because the right half is all black and white and it looks dull and boring.





Design 2

I like this design because it is set out clearly. The eye is drawn to the pictures at the top which are the most important part.

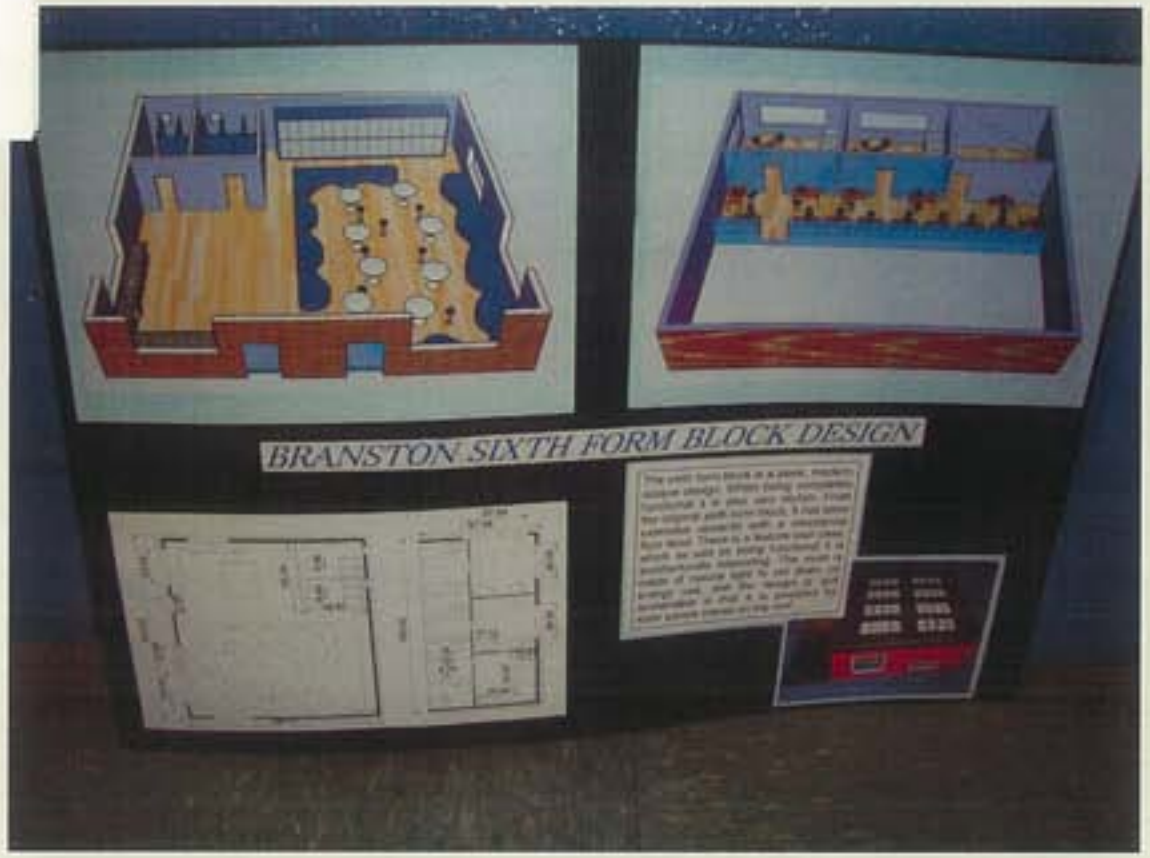
Development

I took my second design through to development. My client suggested there was too much writing, and maybe I should add evidence photos of the solar panels mentioned.

Therefor, I cut down on the writing and took out the bits that weren't as important and left the essential information.

I also took photos of the solar panels on my model and added them below the writing as evidence.

6TH FORM BLOCK DESIGN - 2D ELEMENT



6TH FORM BLOCK DESIGN - 2D ELEMENT