

Design, Engineer, Construct! Level 2:

Unit 3: Delivering a Sustainable Construction Project



2. The candidate will respond to technical issues.

Unit	Incomplete (U)	Secure (C)	Exceptional (A)	Comments:
3.2.1				
3.2.2				
3.2.3				
3.2.4				
3.2.5				
3.2.6				

Name: Jack Littlewood

Date: 16/02/17

Deadline for Submission:





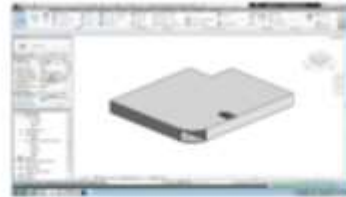
Unit 3: Delivering a Sustainable Construction Project

3.2. The candidate will respond to technical issues.

3.2.1 use a 3D model to test my design

1. Insert your 8 week report of your Revit Model Progress (Unit 2.1) and highlight the times you experimented or altered your design and the impact this had.

Revit Progress 1 + 2

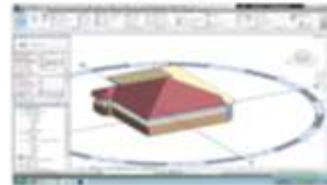


Revit Progress 3

Today on the 11th April I have completed my stairs (Not elevators) and the roof! I have achieved this by making the roof myself which actually hangs over the building creating more effect on the facade. I have also allowed the 'sun path' option which will soon (when I enter the coordinates for my building) will predict the suns path which will then allow me to get solar panels fixed on the building to make it more sustainable.

Revit Progress 4

11/04/2016 I have added colour to my building which is carried over from other buildings in my sector giving the area a added effect for beauty. I have also decided to add a second floor allowing me to add more designs and rooms in my building making it more useful as a whole. on the next revit progress I will be looking to complete the outer walls for the building and add some furniture to some of the rooms. I will also be colour coding my rooms in order to identify which is which along with the key which will be added to the right hand side.



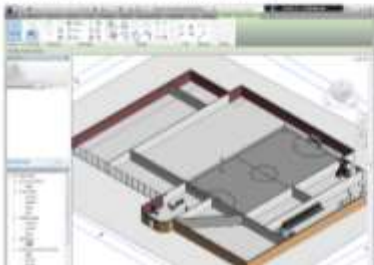
Revit Progress 5

11/04/2016 I have added furniture to the building. for only two rooms: the cafe and the reception. I have got to finish them. I have also added glass doors (mostly of next city) for added effect to the modern society. It also allows users to walk past rooms and look through the doors to see the furniture features. A elevator has also been added which will be included in the next next progress. this allows for disability use to the upper floors making my building accessible!



Revit Progress 6

04/05/2016 I have been expanding the building since I realised the measurements are incorrect so I have been adjusting the size. I have also added more furniture to the building allowing for more use of the finished project. I will be moving the furniture around as I progress, windows have also been added and a ceiling plan is in place which will allow me to add lighting to the rooms, the ceilings will not apply to the sports courts since they need large amounts of space. I will also be adding multiple elevators to the building.



Revit Progress 7

11/05/2016 I have been working more on the interior of the building which is the sports area and the gym. I have also been making my last adjustments to the reception which will now be settled. My walkway is also completed on the reception and a column has been added there to support it. Some more furniture has been added to the ground floor, the furniture in the reception is now complete I will begin on the other areas in the following weeks.

Revit Progress 8

01/06/2016 This week I have added the indoor football pitch and the basketball court and have made some adjustments to the building itself. I have increased the building slightly and hopefully it will keep inside the build able zone. Some more furniture has also been added to give me a visual view on where it should be placed within the building facility. I have also completed a diagram of where all my electrical, water and heat will go in my building, you will find this to the right.

Did you experiment and make unsuccessful changes? Give examples. How did you correct these?

I experimented with the different types of glass and materials which made my building unstable and unsafe so I had to make changed in order for it to work.








Unit 3: Delivering a Sustainable Construction Project

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2.2 validate the design against the brief using a technical investigation



1. Use your key targets from you Compliance Matrix. Evaluate your final idea against each target. Were you successful? Can you suggest improvements?

Key criteria/ Target	Evaluation of Success	Suggest Improvements	Image from model
1. The building will have a range of sports facilities including basketball courts.	The building has 1 large basketball court and 2 tennis courts.	I would have liked squash courts but we were unable to add this due to limited space.	
2. The building will have a sufficient number of waste managements.	The building has waste management throughout the whole building.	Improve the durability of the waste management.	
3. The building is accessible for all types of people.	I've installed elevators and slopes to help all types of people surf through the building.	I added more elevators around the building so they can access upper areas.	
4. The building should be long lasting.	I've made my building out of sustainable buildings as they can therefore be repaired easily.	Use materials which don't erode away overtime.	
5. The building must include a gym facility.	My building does contain a gym facility which can be extended upstairs.	If the gym was larger as a larger audience could then attend.	

Summary:

I have reached most of my success criteria which has meant I've reached most of my goals for the building, however it can be greatly improved if I used the feedback provided to me as feedback is a key area into improving your building.



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2.3 ensure that the project complies with building regulations as it progresses



Building Regulations - Actions taken

Document	Title	Consideration 1	Consideration 2	Consideration 3	Actions
Part B	Fire safety	Is there a safe means of escape from your building in the event of a fire? Does it enable easy and rapid evacuation?	Are your escape routes and exits wide enough? Have you thought about emergency lighting?	Is your building easily accessible for fire fighters and their equipment?	I have placed fire exits or either will do in the long run which can be accessed by emergency staff, I also will place axes around the facility and extinguishes.
Part F	Ventilation	Is your building adequately ventilated to provide a healthy and comfortable environment for its' end users?	How are you protecting against the risk of air borne pollution?	Have you thought which rooms/ spaces will need more ventilation than others - and why?	This is the one I struggled with, I have not yet taken action but I am considering placing ventilation throughout my building as time goes by.
Part K	Protection from falling, collision and impact	Have you provided stairs or ramps and are they safe for people to move between different levels of your building?	Are stairs and ramps adequately guarded e.g. with railings?	What steps can you take to limit the risk of contact with any glazing you have featured in your building?	I have ramps and stairs which are protected with railings including all balconies and walk ways. They're all greatly spaced so there's no contact with glazing.
Part L	Conservation of fuel and power	Does your building, and the services contained within it, promote the conservation of fuel and power?	What steps have you taken to reduce the amount of CO2 your building produces?	What steps have you taken to limit heat loss? Think about the walls, roof, doors, windows, floors...	
Part M	Access to and use of buildings	What provision have you made for people with disabilities at entrances to and within your building?	How will people with disabilities gain access to and move around your building?	How have you ensured that your building's facilities are made available for people with disabilities?	

Why must you ensure your building meets the Regulations?

I must ensure they reach regulations as it allows my building to be more safer and efficient and to not also bypass the law which helps keep the safety of the people within the facility.



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2.4 explain how the building works in practice using quantitative monitoring.



My building is fit for the intended use as I have modified the building so it's much larger to hold a higher quantity of people such as the café and gyms which have been extended for more intake of customers.

I've also built my building to last through sustainable and renewable materials which are easy to replace if damaged or eroded, the more sustainable my building is the more life span it has for the future generation.

Adaptability for my building is not as fit for purpose, my building is adapted so that it can withstand harsh rain conditions and high temperature levels which also uses them benefactors as a resource but if anything else was to change e.g. heavy winds I'd need to act quick.

It's safe to construct and occupy as I all levels are supported my beams which can hold the building stable, there's also no hazardous objects near my site but another site will have to be demolished in order to build mine meaning they'll have to take precautions.

Sustainable to build? Yes, my building is sustainable to build in Manchester as there are little trees located on my facility but under the tree conservation act I'll need to replant them.

The building overall looks good in my eyes and I hope it looks appealing to the staff and customers who are planning on visiting the facility.

The functionality of my design is fit for purpose because it meets all the regulations that are required in order for the go ahead and I've insured that all hazards are considered.





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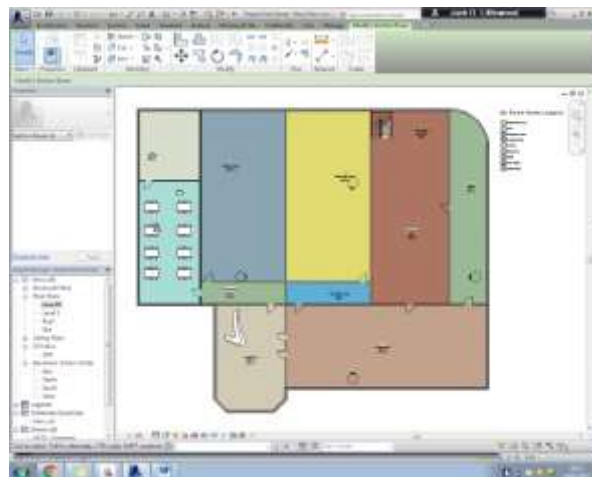
3.2. The candidate will respond to technical issues.

2.5 review progress and reflect on decisions

1. Insert extracts from your 8 week report of your Revit Model Progress (Unit 2.1) and highlight the times you would have made different decisions with hindsight:

19/04/2016 I have added colour to my building which is carried over from other buildings in my sector giving the area a added effect for beauty. I have also decided to add a second floor allowing me to add more designs and rooms in my building making it more useful as a whole, on the next Revit progress I will be looking to complete the outer walls for the building and add some furniture to some of the rooms. I will also be colour coding my rooms in order to identify which is which along with the key which will be added to the right hand side.

In this extract I should've reconsidered the colour of my building as I think I could've turned it out better if I did, also the second floor as it stands is incomplete and I also have empty space which I have not decided how to use.



What have you learnt from reviewing your decisions?

I've learned that I've made some poor choices which could've made a big difference but luckily I have made some excellent ones which have helped me greatly. I've learned that aspects like the walkway and spacious rooms are positive decisions.





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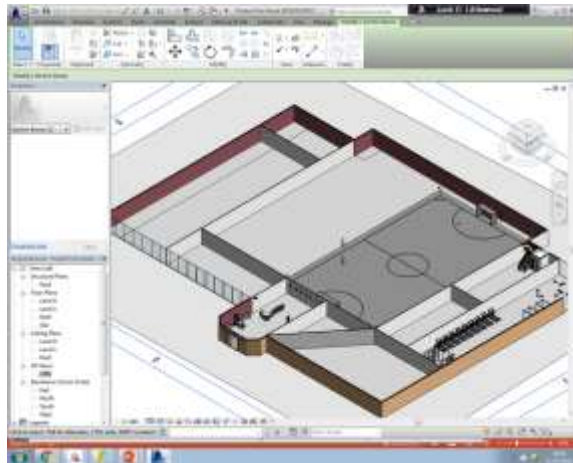
3.2. The candidate will respond to technical issues.

2.6 consult and respond appropriately to peer review

1. Insert extracts from your 8 week report of your Revit Model Progress (Unit 2.1) and highlight the times you have consulted peers when making decisions:

15/05/2016 I have been working more on the interior of the building which is the sports area and the gym, I have also been making my last adjustments to the expansion which will now be settled. My walkway is also completed on the reception and a column has been added there to support it. Some more furniture has been added to the ground floor, the furniture in the reception is now complete I will begin on the other areas in the following weeks.

In this extract the areas highlighted red indicate where I have consulted peers, I've had numerous help with the expansion of the project and also the walkway which was great addition to the project with the thanks of sir. The column and furniture have also been helped with and feedback has been provided to help rate the positioning of my furniture.



How did you find asking for advice? Was it problematic? Or useful?

I found it useful as at the time I wasn't experienced with Revit and with the help of pupils and teachers I have managed to achieve some excellent designs and feedback.

