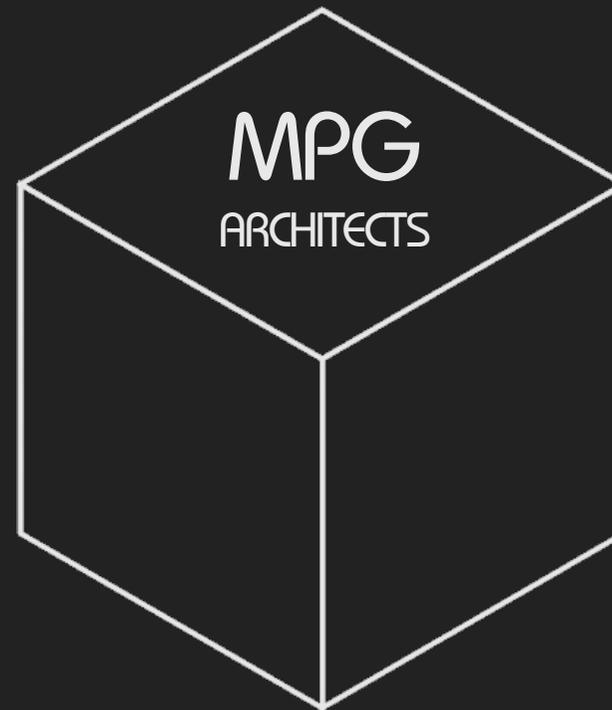


ESTIMATING ARCHITECTS' FEES + COMPETITIVE BIDDING

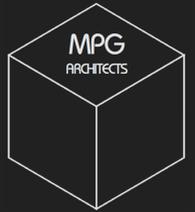


PRACTICE AND MANAGEMENT

Assignment 1

Filippos Glibbery - 4186485
Electra Pangalou - 4187163
Peter Macnaughton - 4167391

Contents.



1

Building Cost Estimate p. 1 - 4

2

Fees p. 5 - 9

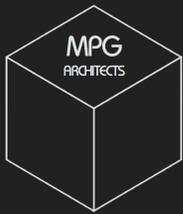
3

Tender p. 10 - 15

4

Reflection p. 16

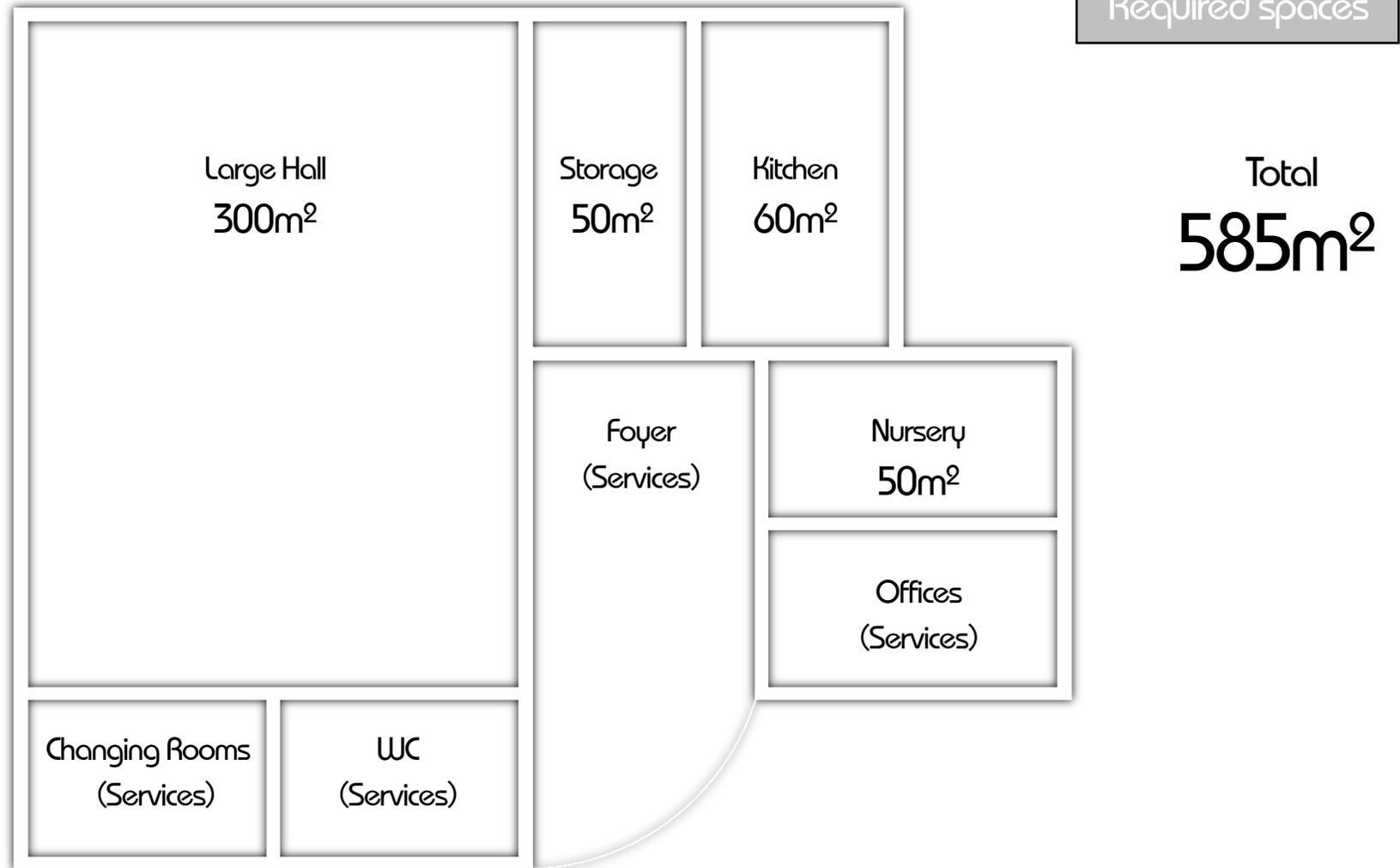




1 Building Cost Estimate

Introduction

The diagram on the right illustrates the potential spaces for a single storey community centre. Using various sources and precedents we concluded that a floor area of roughly 585m² would suffice for this typology (including 30% floor area for circulation and services).



Sources

Littlefield D. and Buxton P. (2012) Metric Handbook - Planning and Design Data

<https://www.sportengland.org/media/32402/Village-and-community-halls.pdf>

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/324056/BB103_Area_Guidelines_for_Mainstream_Schools_CORRECTED_25_06_14.pdf

1. Building Cost Estimate

Cost of Building Elements

In order to estimate the construction costs (per square meter) of this project, we used the SPON's Architects' and Builders' price book 2014. The adjacent table provides an analytic description of all the parts, services and appliances that add up to give the final value per m2 that will be used to estimate the basic cost of the construction. The last column of the table illustrates the contribution of each individual element in form of a percentage. An analysis of the specific materials for the project are included in Appendix A.

Total Cost /m²
£ 1,158.33

CONSTRUCTION COSTS								
Element	Area	Length	Number	Cost		Cost		Percentage
Units				units are £/m £/m ² or £/No. respectively		£		
	m ²	m	No.	Low	High	Low	high	
SUBSTRUCTURE								
Raft foundations	585	-	-	£130.00	£165.00	£76,050.00	£96,525.00	12.4%
Groundfloor	585	-	-	£65.00	£79.00	£38,025.00	£46,215.00	6.0%
Kingspan 150mm Floor Insulation	585	-	-	£25.50	£28.50	£14,917.50	£16,672.50	2.1%
SUPERSTRUCTURE								
Steel Frame (for landscape roof)	585	-	-	£110.00	£140.00	£64,350.00	£81,900.00	10.6%
Landscaped roof	585	-	-	£105.00	£135.00	£61,425.00	£78,975.00	10.2%
Downpipes	-	40	-	£11.50	£14.90	£460.00	£596.00	0.1%
External walls	436	-	-	£70.00	£91.00	£30,520.00	£39,676.00	5.1%
External windows	87.2	-	-	£190.00	£240.00	£16,568.00	£20,928.00	2.7%
Internal walls and partitions	255	-	-	£46.00	£55.00	£11,730.00	£14,025.00	1.8%
Cubicle partitions	-	-	10	£750.00	£910.00	£7,500.00	£9,100.00	1.2%
Internal doors	-	-	17	£250.00	£300.00	£4,250.00	£5,100.00	0.7%
Wall finishes	837	-	-	£3.50	£3.85	£2,929.50	£3,222.45	0.4%
Floor finishes	585	-	-	£22.00	£27.50	£12,870.00	£16,087.50	2.1%
Skirting Board	-	279	-	£11.30	£15.30	£3,152.70	£4,268.70	0.6%
Ceiling finishes	585	-	-	£65.00	£91.00	£38,025.00	£53,235.00	6.9%
FITTINGS & FURNISHINGS								
Reception desk	-	-	1	£1,575.00	£2,025.00	£1,575.00	£2,025.00	2.0%
Office work station	-	-	3	£570.00	£730.00	£1,710.00	£2,190.00	2.0%
SERVICES								
WC	-	-	7	£240.00	£290.00	£1,680.00	£2,030.00	2.0%
Urinals	-	-	3	£200.00	£240.00	£600.00	£720.00	2.0%
Bathroom sinks	-	-	5	£455.00	£560.00	£2,275.00	£2,800.00	2.0%
Kitchen sinks	-	-	1	£280.00	£340.00	£280.00	£340.00	2.0%
Water installations	585	-	-	£34.00	£47.50	£19,890.00	£27,787.50	2.0%
Space heating & Air-conditioning	585	-	-	£100.00	£140.00	£58,500.00	£81,900.00	2.0%
Ventilation	585	-	-	£15.70	£22.00	£9,184.50	£12,870.00	2.0%
Electrical installations	585	-	-	£110.00	£150.00	£64,350.00	£87,750.00	2.0%
Fire & Lighting protection	585	-	-	£1.70	£2.40	£994.50	£1,404.00	2.0%
Communications & Security	585	-	-	£46.00	£64.00	£26,910.00	£37,440.00	2.0%
Builder's services work	585	-	-	£11.90	£15.20	£6,961.50	£8,892.00	2.0%
EXTERNAL WORKS								
Paving	117	-	-	£32.00	£42.00	£3,744.00	£4,914.00	2.0%
Car parking	-	-	3	£1,750.00	£2,600.00	£5,250.00	£7,800.00	2.0%
Planting	117	-	-	£39.00	£51.00	£4,563.00	£5,967.00	2.0%
Bench	-	-	2	£880.00	£1,125.00	£1,760.00	£2,250.00	2.0%
Cycle Stand	-	-	4	£36.00	£46.00	£144.00	£184.00	2.0%

Sources

Langdon D. (2014) SPON's Architects' and Builders' Book, 139th Edition.

1. Building Cost Estimate

Precedent Investigation

We investigated three similar buildings in order to get a feel of the values that are involved. All the buildings below are Community Centers recently constructed in the UK, using similar materials and construction techniques. We calculated the cost per meter squared in order to draw a comparison between our building, regardless of its slightly smaller scale. The values we found for our project are slightly smaller than these precedents, possibly a consequence to the different location factors.

Building Name	Date Completed	Location	Price	Floor Area (m ²)	Cost per m ²
1. Trull Church	Oct. 2014	Bath, UK	£1.115.000	510	£2186
2. Darwin Hall	Sep. 2010	Lichfield, UK	£796.000	714	£1319
3. Cullompton	Sep. 2011	Devon, UK	£1.700.000	859.4	£1978



Average Precedents' Cost / m²
£ 1,827.67

Sources

<http://trullcommunitycentre.org.uk>

<http://www.darwinhall.org.uk>

<http://www.cullomptoncommunitycentre.org.uk>

1. Building Cost Estimate

Cost of Building Contract

In order to calculate the total building cost, we multiplied the value of the cost per meter squared (£1,053) adjusted to the location factor for East Midlands with the floor area of our building (585m²). This value was then compared with the cost factor of the typology retrieved from the SPON's document. Ultimately, there was a small difference between the two, so we decided to leave the value as is.

Location Adjustment Factor for East Midlands
-10%

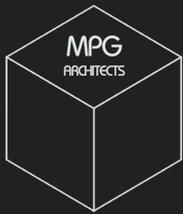


Total Building Cost
£616,020.23

Total Measured Costs	£ 593,144.20	£ 775,789.65
Total Cost By Typology	£ 643,500.00	£ 804,375.00
Adjusted Measured Costs	£ 533,829.78	£ 698,210.69
Adjusted Costs by Typology	£ 579,150.00	£ 723,937.50
	Total	Per m ²
Average Adjusted Measured Costs	£616,020.23	£1,053.03
Adjusted Costs by Typology	£651,543.75	£1,113.75

Sources

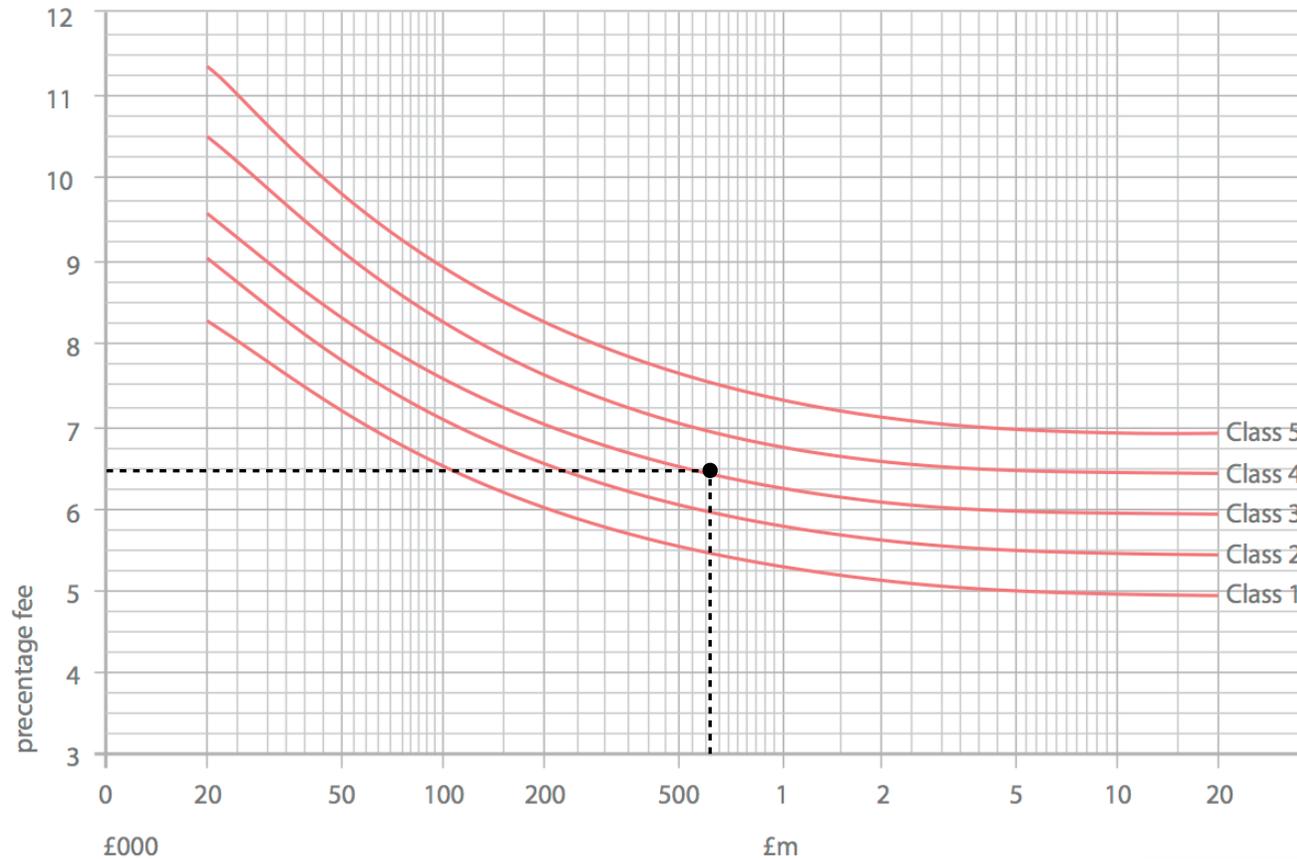
Langdon D. (2014) SPON's Architects' and Builders' Book, 139th Edition.
http://www.scoresonthedoors.org.uk/images/img_uk.gif



2 Fees

We used one of the fee scale graphs suggested by a British architecture firm. According to the division of classes in this document, community centers are a Class 3 type building, therefore given a building cost of £616,020, the estimated fees are 6.5% percent. This translates to £40,041.32 for our practice, considering the entire construction process.

indicative percentage fee scales: new works



Fee scales

Fee Scale %:
6.5%

Architects' Fees:
£40.041

FEE SCALE %	6.5%
Average adjusted measured costs	£616,020.23
Architects' Fees	£40,041.32

Sources

http://www.bhbarchitects.co.uk/images/guidance_on_fees.pdf

2. Fees

Analytical Method

We assumed to be a small practice with roughly 30 years of experience combined. We are located in Nottingham, UK and the team consists of three founding partners, one CAD technician and one part-time assistant.

The estimation of the total costs for the office took into account both the direct and indirect costs, the former of which was set to a high value, given our desire to develop and expand as a practice. Another factor that substantially affected our proposed salary is our particular expertise in this specific typology.

INDIRECT COSTS		
	Building Costs	Yearly Cost
1	rent	£7,350.00
2	cleaning	£288.00
3	electricity + Gas	£1,073.15
4	water	£300.00
Technology costs		
5	software	£300.00
6	computer maintenance	£120.00
7	internet + telephone	£384.00
8	printing	£600.00
9	website maintenance	£121.20
Resources Costs		
10	stationary	£120.00
11	books	£900.00
12	model making materials	£400.00
Legal & Membership Costs		
13	RIBA/ARB subscription	£240.00
14	architects professional insurance	£902.55
15	CIBSE associate membership	£516.00
Other Costs		
16	transport	£5,200.00
17	postage	£520.00
18	advertising	£300.00
19	cpd	£5,000.00
20	charitable support	£1,000.00

DIRECT COSTS	
Staffing costs	
Partner, E. P.	£60,000.00
Partner P. G.	£60,000.00
Partner P. D.	£60,000.00
CAD technician	£17,000.00
Administrator	£3,400.00
Total yearly office running cost	£226,034.90

1. Gumtree Online Service - offices for rent price range
2. TOP Cleaners Nottingham Company
3. Electricity Prices - Online prices comparison service
4. Severn Trent Water Company
5. Autodesk Inc.
6. YOUR I.T. Support
7. BT Business
8. Creative Office
9. WIX
10. Ryman
11. Personal estimation
12. Personal estimation
13. RIBA
14. RIBA Insurance Agency
15. CIBSE
16. Personal estimation
17. Personal estimation
18. Personal estimation
19. RIBA
20. Personal estimation

Sources

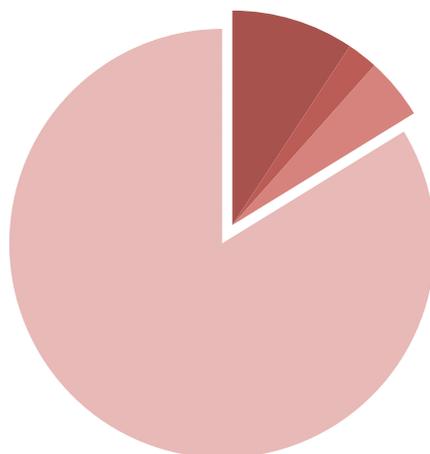
Refer to Appendix B

2. Fees

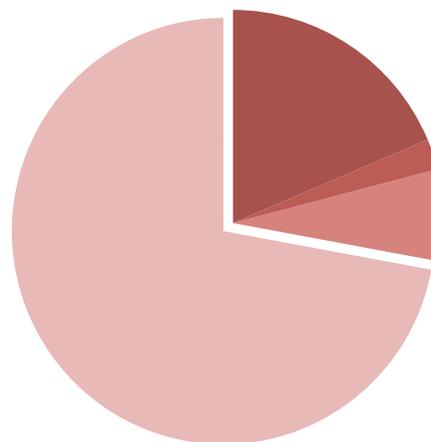
Labour Expenditure Projection

Staff initials	Role, specialism	Working days	Administration	Training	Travel	Fee earning days
F.G.	Partner, Graphics	215	20	5	10	180
P.D.M.	Partner, Building Services	215	40	5	15	155
E.P.	Partner, Client Relations	215	30	5	25	155
H.P.	CAD technician	215	4	1	0	210
					Total	700
					Avg cost/ working day/ person	£322.91

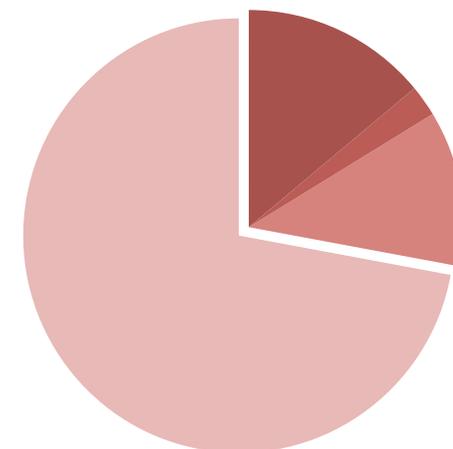
Filippos



Peter



Electra



- Management/ Administration
- Training/ Development
- Travel
- Fee earning days

Weekends	Bank Holidays	Sick Days	Personal Days	Holidays	Working Days
105	7	5	3	30	215

Charge Out Rate

As an office we are ambitious and hope to grow quickly over the next few years. In order to achieve this we set ourselves a target profit margin of 25% per year. Simultaneous equations were used to calculate charge out rates such that the ratio between partner and technician salary is equivalent to the ratio between their respective charge out rates.

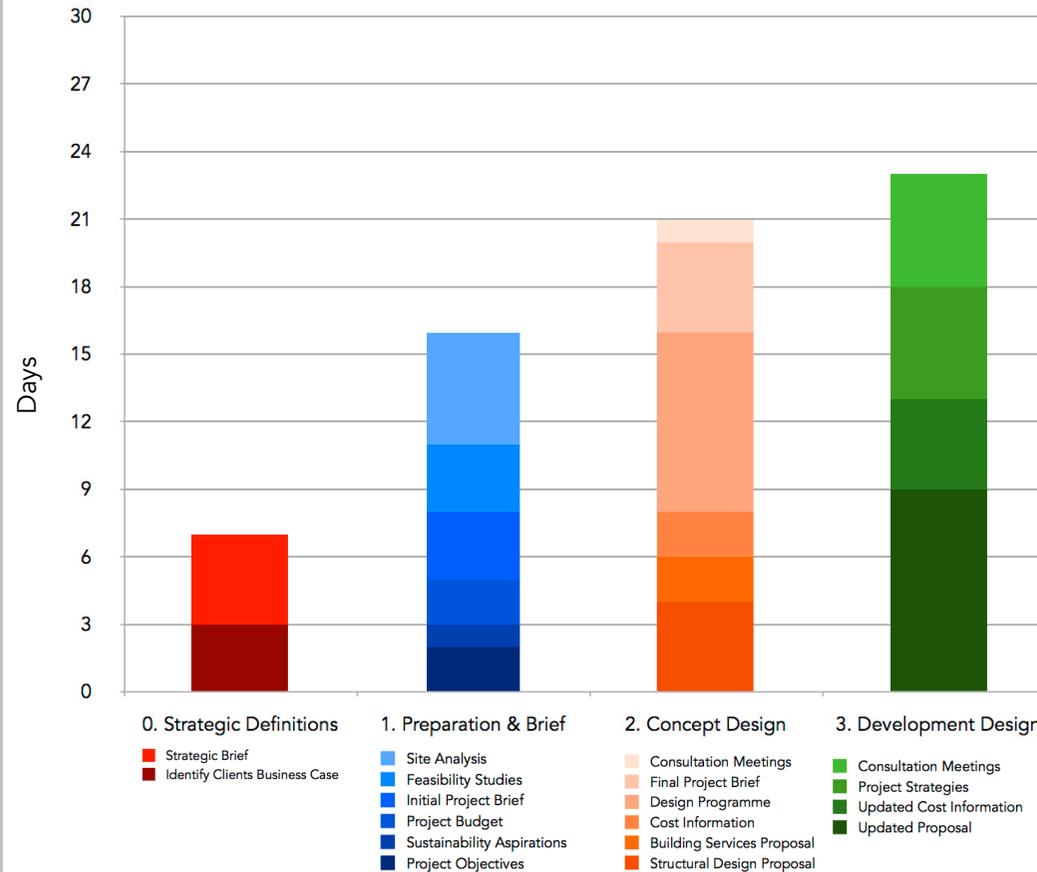
Position	Average cost per fee earning day	With profit at 25%	Charge out rate	Charge out rate with VAT at 20%
	£/Day	£/Day	£/Day	£/Day
Partner	£322.91	403.63375	£514.18	£617.02
Technician			£145.69	£174.83

2. Fees

Work Division

The coloured graph illustrates the required estimated time for each stage, based on the RIBA work stages (2013). It is evident that stages 2 and 3 require particular emphasis. The total estimation for stages 0-3 is by and large 10 weeks.

TOTAL DAYS WORK	67
ELECTRA PANGALOU	20
PETER MACNAUGHTON	22
FILIPPOS GLIBBERY	20
CAD TECHNICIAN	5



STAGE	DAYS
0. Strategic Definitions	
Identify Clients business case	3
Strategic Brief - Establish Programme	4
1. Preparation & Brief	
Project objectives	2
Sustainability Aspirations	1
Project Budget	2
Initial Project Brief	3
Feasibility Studies	3
Site Analysis	5
2. Concept Design	
Structural Design Proposal	4
Building Services Proposal	2
Cost Information	2
Design Programme	8
Final Project Brief	4
Consultation Meetings	1
3. Development Design	
Updated Proposals	9
Updated Cost Information	4
Project Strategies	5
Consultation Meetings	5

Sources

<http://www.architecture.com/Files/RIBAProfessionalServices/Practice/RIBAPlanofWork2013Template.pdf>

Comparing Results

We preferred the analytical method, because it takes into account the expenses of our office, and thus provides a more sustainable figure. If we complied with the fee scales, we would most likely face adversities as a small office.

Stages 0-3

Cost of Building Contract

£616,020.23

Architects Fees

£32,607.78

Percentage of Building Cost

5.29%

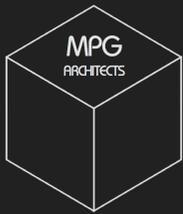
List of Drawings

- Floor Plans
- Sections
- Elevations
- Structural Details
- Environmental Analysis
- 3D Renderings

	Days On Project	Charge Out Rate	Cost
	DAY	£/DAY	£
E.P.	20	£514.18	£10,283.66
F.G.	20	£514.18	£10,283.66
P.M.	22	£514.18	£11,312.03
CAD	5	£145.69	£728.43
Total	67		£32,607.78

Method	Total Cost	Our Fee	Fee Percentage
Analytical	£616,020.23	£32,607.78	5.29%
Fee scales	£651,543.75	£20,020.65	3.07%

Stages	Percentages	Cost
0-1	10%	£4,004.13
2	20%	£8,008.26
3	20%	£8,008.26
total	50%	£20,020.65



3 Tender

Considerations Affecting Final Tender Fee Bid

General considerations

The already high workload, direction of our practice, good current work climate and expertise of our practice were all considerations raised in the partner's meeting that decided our fee proposal for this project. Prior to this discussion both the analytical method and fee scales were used in an adapted form to suit the Nottingham locality to frame our discussion with the building cost and our fee already established. For the rough costing of the building we assumed an average general quality requirement and above average environmental performance.

Profit Margin

As a practice we are currently well supplied for projects. In fact to take on this project may have meant taking on another member of staff; which while positive because we are trying to expand is a little too soon for us financially unless this project could provide sufficient profit to enable us to undergo the expansion it would necessitate. This supports us following our objective of 25% profit margin as calculated through the analytical method calculated previously.

Past Experience

It was also raised that we are in danger as a practice of falling into the niche of community centre designs. We have over the last 5 years completed a large number of Community centre projects and while some practices relish in their niche specialisms as a practice we would rather have a broader range of projects and as we are well provided for work at the moment the profit margins for this project would have to be somewhat substantial for us to take it on.

Competition

While we are aware that there is a high level of competition for this project we are hopeful that the expertise we have developed over the last few years will put us in good stead for getting this work at a higher fee than other practices may have proposed.

Conclusion

Based on the discussion of these factors we decided to pitch for the full analytical fee and to stress in our proposal both the expertise of our practice in this area and our habit of including detailed specification in stage 3 rather than stage 4 of the plan of work which ensures that even when a client follows the design and build route the design and quality is not compromised by the corner cutting of the contractor.

3. Tender

Lump Sum vs Contract Percentage

Our ultimate requested payment method took the gross total found using the analytical method of £32,608 represents roughly half of the architectural process and is 5.29% of the cost of the building. This is potentially slightly high for these first stages as continuing this level would mean the architectural fees would be 10.58% of the building cost. However this is due to our practice taking the stance that a more detailed specification should and is always part of our stage 3 works. We do this to protect our clients from cost cutting contractors reducing the quality in a design and build contract starting at stage 4. We would therefore predict that the following stages would take less than the 5.29% that it would take us to achieve stage 3.

LUMP SUM STAGES 0 - 3

£39,129.00
(inc. VAT)

The Lump Sum Fee method is most appropriate where the extent of architectural work is well known. As our practice has completed various similar projects, we feel confident that we will be able to accurately estimate the amount of work required. Furthermore, choosing the lump sum option ensures that we will not need to constantly concern ourselves with financial matters, even though in the condition of unforeseen delays, it might work to our disadvantage. In conclusion, this method would be an apt choice for this project.

% OF BUILDING CONTRACT STAGES 0 - 3

5.29%

In case of participating in a competition, this option would potentially be wiser, since it is the preferred choice of most clients. This is not the case for this project. Additionally, in case that our cost of building contract turns out to be an overestimation we may also lose money by choosing this payment method.

MPG ARCHITECTS

Contact Details
0115-012345
mpgarchitects@gmail.com



Dear Cedric Diggory

This letter follows our discussion upon your project to construct a Community Centre in Beeston. Within, is provided a quotation for our expected fee and an early anticipation of the cost of the building, as well as an explanation of what work we are anticipating to indulge in.

We are a practice with combined 30 years of experience and have built a series of east midlands based community centres. We ensure all our projects are completed thoroughly and to a high environmental standard. We have over recent years specialised in east midlands community centres of differing scale and feel well placed to bring both expertise and wisdom to the design process of this project including the ability to realistically predict the work required for projects that have a broad range of beneficiaries such as this.

Summary Costs:

Anticipated Building cost: £616,000
Our Fee: £32,608 (stages 0-3)
Fee VAT: £6,522

We would expect this to be provided in three instalments of £10,000, £12,608 and £10,000 at the beginning of stages 0,2 and 3 respectively.

The building

An initial layout has been produced in support of this application to enable us to provide a relatively detailed anticipated cost for the building and is shown below.

The total floor area of the building is 585m²
The total anticipated cost of the building has been calculated to be within the region of £616,000.

This is based upon the shown layout and an assumed construction of average quality materials, brick facing and a green roof.

Our Fee

Since the official eradication of architect's fee scales we have calculated our fees on the basis of a projection of the time a project will take and an hourly rate for our staff. We usually try to be realistic with our fee projections, which is why for a project such as this where there is a heightened interest for local residents and therefore a complicated contested consultation process, we have anticipated a higher than normal time requirement for stages 0-3 of the architects plan of work.

Our fee for stages 0-3 is: £32,608

This has been estimated upon the basis of

	Days worked	Daily rate
Partners	117	£514.18
Technical staff	5	£145.69

Work undertaken

Working from the RIBA's 2013 plan of work our bid is to undertake stages 0-3 which enables you to make the decision of whether to follow the traditional route or at stage 3 passing on to a design and build contract with a contractor. While we encourage all clients to follow the traditional route as it gives you greater control over specification during construction, we have anticipated in our fee the extra time to ensure good quality through our specification if you did decide to pursue a design and build contract.

Explanation of stages 0-3 from RIBA Plan of work

Stage 0:

Identify client's Business Case and Strategic Brief and other core project requirements.

Stage 1:

Develop Project Objectives, including Quality Objectives and Project Outcomes, Sustainability Aspirations, Project Budget, other parameters or constraints and develop Initial Project Brief. Undertake Feasibility Studies and review of Site Information.

Stage 2:

Prepare Concept Design, including outline proposals for structural design, building services systems, outline specifications and preliminary Cost Information along with relevant Project Strategies in accordance with Design Programme. Agree alterations to brief and issue Final Project Brief.

Stage 3:

Prepare Developed Design, including coordinated and updated proposals for structural design, building services systems, outline specifications, Cost Information and Project Strategies in accordance with Design Programme.

Our estimations include a more thorough specification than the RIBA's suggested "outline specifications" in stage 3. This is to ensure that your quality requirements are secured by what would be sent to tender if you were to opt for a design and build contract.

We would also advise as to which other professional services are requirements or advisable for you to engage. We have in house building services engineers so a separate service will not be required for that side of the construction.

We are confident that despite the complexities we can provide you with not only a successful project but one which will go beyond your original brief and undertake a greater social and environmental significance bolstering Beeston's community and drawing greater interest and investment to the area by raising its stature within the city of Nottingham.

We look forward to your response and are happy to discuss our fees further with you at any time.

Yours truly,

Electra P. Filippos G. Peter M.

3. Tender

Considerations of the SFA

The Standard Agreement between architects and clients is highly informative and is a practical document that we would fully utilise if the client decides to accept our fee proposal. In a field where even the smallest of projects is a matter of thousands of pounds ensuring that one is legally covered and that any agreements especially on payments are binding is essential. Architecture is also a creative and therefore subjective discipline, in which ones work can end up unused purely due to style preferences; it is also volatile as there are many legislative and other external influences that can effect the success of a project. As such, it is of paramount importance that the fees of the architect's work are protected from these shifts. The document is a simple yet comprehensive explanation of the key components of the work of an architect and the other key roles within any construction project.

Fees

The fee amount, payment method, payment schedule and payment conditions are fundamental parts of the SFA. It is crucial that these are established as early as possible to protect architects from non-payment. Included in this are any tax issues pertinent to projects inside and outside of the UK such as VAT and international tax agreements.

Important appointments

The most important thing for the architect - and also the client - is the appointment of the various professionals required by the standard form of agreement. While it is not the architect's responsibility to ensure this happens, it is in our interest to ensure that the client does appoint someone to each role and fully understands the responsibilities that each position entails. Especially in the context of these appointments the relative confidentiality of the finances, designs and other pertinent elements of the project must be agreed upon by all parties.

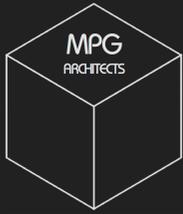
Establishing legal framework

The RIBA and ARB have established a strong legal framework and system for conflict resolution that the standard form is a part of. In order to avoid conflict, the role of the RIBA and ARB need to be well understood by the client as well as their code of conduct so that in any situation of dispute or conflict the proper procedures can be followed in resolution.

As well as an understanding of these things it is essential that the liability of the architect, client and contractors are all understood and provided for by each party carrying out appropriate insurance. For larger projects it is worthwhile having a legal consultant check the documentation to ensure that it is comprehensive and binding to both parties.

Level of involvement

The client and the architect must establish an exact agreement of their roles respectively. The effects of substantial changes to design and the different points in the process must be written into the legal documentation as to how costs for these changes should be decided upon. The SFA recommends specific meetings at various stages through the process that enable the client to sign off sections of work.



4 Reflection

This project was useful for grounding our education so far in reality. The fact is that architecture is a competitive and commercially influenced field, therefore this investigation was really valuable especially for those of us who hope one day to set up our own architectural practice. Especially interesting to us was the high cost of charge out rates for architects on a sizeable salary as well as the realisation of how significant factors such as VAT and Income tax are upon the numbers involved.

Early on in the report, while calculating the general cost of the building, it quickly became apparent why estimating the cost of a project is so difficult, especially at this early stage. External factors such as site access and unknowns such as the specification level or quality of soil at foundation depth can have very significant effect on the cost of a building. In this project we have learned how expensive architecture is. Even using fee scales the architectural fees for this project would have been higher than we would have guessed. We have also become aware of how difficult it can be to produce an accurate business plan as the market forces of other sectors have an influence on the architectural practices costs.

This project has also taught us the importance of up to date reference material, as we initially looked at an earlier version of the SPON's Architect's document and discovered how different the values were even over a short number of years. We were also introduced to the concept of marketing ourselves to a client rather than our normal audience of university architecture educators who have already a much higher knowledge than your average client.

Working through the analytical method made the importance of business mindedness in architecture very apparent. Architectural offices due to their reasonably high need for CPD and for physical resources such as books and model making materials do cost a large amount to run and if one were unaware of this one would be liable to undersell the work done. The Standard form of agreement was a key document in understanding the components of an architect's responsibility and further emphasised the need for an architect to be both pragmatic and commercially minded in the organisation of work and time.

Reflection on the Approach

Despite the extent of this project, most of the values were inevitably based on assumptions and estimations. Therefore, many differences are expected to occur between our calculated data and any potential real-world applications. Every building is different, so using various standardised procedures may easily lead to largely deviating values. For example, using the standard fee scales to arrive to a potential percentage might not always be a sustainable option for a company, especially a small-sized office like the one we envisioned. Furthermore, a larger abundance of sources and citations could have been used to reduce potential inaccuracies, but overall we consider the outcome of the calculations to be a reasonable one.

Appendix A

1 SUBSTRUCTURE p.163
Raft foundations simple reinforced concrete raft on poorer ground for development up to two storey high
Mechanical excavation to reduce levels, disposal, level and compact, hardcore bed blinded with sand, 1200 gauge polythene damp-proof membrane, in situ concrete 20.00 N/mm ² – 20 mm aggregate (1:2:4): 200 mm thick concrete slab with 1 layer of A252 fabric reinforcement
Kingspan Thermafloor TF70 (Thermal conductivity 0.022 W/mK) rigid urethane floor insulation for solid concrete and suspended ground floors: 150 mm thick
SUPERSTRUCTURE
Steel frame; composite beam and slab floors Suspended slab; permanent steel shuttering with 130 mm thick concrete; no coverings or finishes, :up to six stories
Polyester-based elastomeric bitumen waterproofing and vapour equalization layer, copper lined bitumen membrane root barrier and waterproofing layer, separation and slip layers, protection layer, 50 mm thick drainage board, filter fleece, insulation board, Sedum vegetation blanket intensive (high maintenance – may include trees and shrubs, require deeper substrate layers, are generally limited to flat roofs)
Rainwater downpipes pipes; fixed to backgrounds; including offsets and shoes: 110 mm dia. uPVC
Cavity wall; facing brick outer skin; insulation; plasterboard on stud inner skin; emulsion (U-value = 0.30 W/m ² K) machine-made facings; PC £350.00/1000
Softwood windows (U-value = 1.6 W/m ² K) Standard windows painted; double glazed; over 1.50 m ² , up to 3.20 m ²
Timber stud partitions; softwood stud comprising 100 mm × 38 mm softwood studs at 600 mm centres; head and sole plates; 12.5 mm thick plasterboard each side; tape and fill joints; emulsion finish
medium quality WC cubicle partition sets; stainless steel framing; real wood veneer face chipboard dividing panels and doors; ironmongery; small range (up to 6 cubicles); standard cubicle set; (rate per cubicle)
Standard doors; cellular core; softwood; softwood architrave; aluminium ironmongery (latch only) single leaf; moulded panel; gloss paint finish
Comparative finishes one mist and two coats emulsion paint
Softwood 22 mm thick wrought softwood flooring; 150 mm wide; t&g joints;
softwood skirting, gloss paint finish
Armstrong suspended ceiling; assume large rooms over 250 m ² : wood – Maderal laminates; plain; concealed grid grid
FITTINGS & FURNISHINGS
Reception desk straight counter; 3500 mm long; 2 person
Furniture and equipment to general office area; standard off the shelf specification workstation; 2000 mm long desk; drawer unit; task chair
SERVICES
low level WCs; vitreous china pan and cistern; black plastic seat; low pressure ball valve; plastic flush pipe; fixing brackets
bowl type wall urinal; white glazed vitreous china flushing cistern; chromium plated flush pipes and spreaders; fixing brackets
sink; glazed fireclay; chromium plated waste; plug and chain
sink; stainless steel; chromium plated waste; plug and chain double drainer; double bowl (bowl and half)
school; secondary; potable and non potable to labs, art rooms (taken as closest comparable use)
school; secondary; potable and non potable to labs, art rooms (taken as closest comparable use)
school; secondary; potable and non potable to labs, art rooms (taken as closest comparable use)
school; secondary; potable and non potable to labs, art rooms (taken as closest comparable use)
school; secondary; potable and non potable to labs, art rooms (taken as closest comparable use)
school; secondary; potable and non potable to labs, art rooms (taken as closest comparable use)
offices and hotels, central heating and electrical installation
EXTERNAL WORKS
Slab paving precast concrete paving slabs on sub-base; including excavation
surface car parking with landscape areas
shrubbed planting
Benches; bolted to ground benches – hardwood and precast concrete
Galvanized steel cycle stand

Appendix B

1	http://www.gumtree.com/office-space/nottingham
2	http://www.topcleanersnottingham.co.uk/nottingham-cleaners-prices-cleaning-services-pricing-.html
3	http://www.electricityprices.org.uk/average-electricity-bill/
4	http://www.ccwater.org.uk/watermetercalculator/
5	http://www.autodesk.co.uk/suites/building-design-suite/included-software
6	http://www.your-itdepartment.co.uk/business-it-support.php
7	http://business.bt.com/broadband-and-internet/fibre-broadband/
8	http://www.creativeofficeltd.co.uk/
9	http://www.wix.com/upgrade/website
10	http://www.ryman.co.uk/business-accounts/
11	Based on purchasing 30 books a year with an average cost of £30
12	Based on costs for each final model being £40 and making 10 a year
13	http://www.architecture.com/RIBA/JoinTheRIBA/Practices/Subscription.aspx
14	http://www.ribaia.com/PI-Insurance/Pages/default.aspx
15	http://www.cibse.org/getmedia/42171e79-a1eb-4332-be51-915cc75c2142/CIBSE-Membership-Fees-2015.pdf.aspx
16	Transport costs are based upon two return trips to london from nottingham per week average cost of £50 by train.
17	Postage was estimated to be £10 a week for 52 weeks average office opening weeks a year
18	As our office gets work predominantly by word of mouth we allocate only £300 a year to advertising.
19	http://www.architecture.com/RIBA/CPD/CPD.aspx
20	As an office we are committed to supporting construction in the developing world with a yearly grant of £1000

1. Gumtree Online Service - offices for rent price range
2. TOP Cleaners Nottingham Company
3. Electricity Prices - Online prices comparison service
4. Severn Trent Water Company
5. Autodesk Inc.
6. YOUR I.T. Support
7. BT Business
8. Creative Office
9. WIX
10. Ryman

11. Personal estimation
12. Personal estimation
13. RIBA
14. RIBA Insurance Agency
15. CIBSE
16. Personal estimation
17. Personal estimation
18. Personal estimation
19. RIBA
20. Personal estimation