



That was the answer...
Now what was the question?

Today:

- ◆ 1. Introductions
- ◆ 2. Questions of principle
 - ◆ 2.1 Sustainability
 - ◆ 2.2 Church Anatomy
- ◆ 3. St James' Anatomy and ideas
- ◆ 4. Examples
- ◆ 5. Process
- ◆ 6. Fees (approximate!)
- ◆ **Discussion throughout!**

Meet the Archangels



Nigel Walter
Director



Dirk Visagie
Director



Apostolos Petrakis
Associate



Oksana Lavreniuk-Tsyrik
Architectural Assistant



David Ogilvie
Architect



Alexandros Michalitsianos
Specialist Conservation Technologist



Jack Boyns
Architect

Questions:

What does it mean to be

CHURCH?

Today?

In this place?

Questions:

How's the Fit?

Why Bother?

'We shape our buildings,
and afterwards
our buildings shape us.'
Winston Churchill



Seriously injured! . . .

Oh, she's chirpy enough for the moment . . . in *stockinged feet*. But the harm's been done . . . the harm of big toes bent, of joints enlarged, of bones and muscles hopelessly cramped. And at 15! that's tragedy.

Avoidable? Of course. Who doesn't know by now that Clarks make absolutely foot-sure shoes — footgauge fitted for length, breadth and girth — in styles to put a gleam into teen-age eyes, in fittings to guard shapeliness in teen-age feet.

Clarks

SHOES FOR TEENAGERS

CHEYENNE
Unlined calf in
tan colour. Sizes 3-8.



Questions:



What on earth are you doing ?

Questions:

Responsibility

Opportunity

location

What are you doing on earth ?

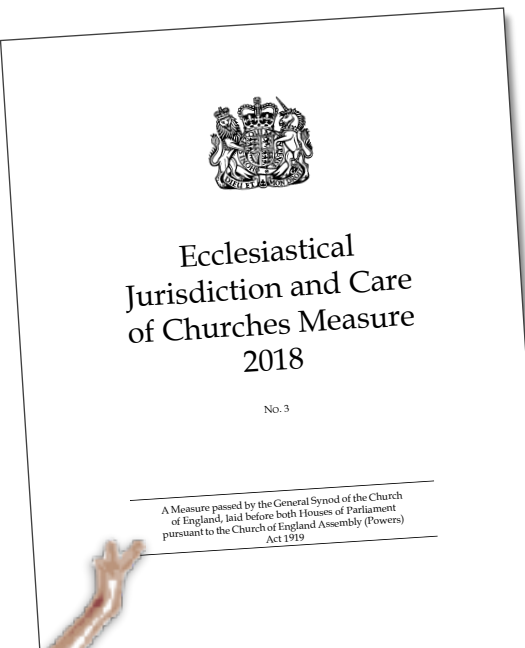
vocation

1. Principles Living Heritage

‘[Historic England] believes that this country's historic places of worship should retain their role as **living buildings** at the heart of their communities.’
Historic England, *New Work* (2012)

‘Cultural heritage is not something apart to be protected, but is a **living and dynamic** strand of the way we live, work and develop’
ICOMOS-UK, *Cultural Heritage Manifesto* (2015)

‘In a higher world it is otherwise,
but here below **to live is to change**,
and to be perfect is to have changed often.’
John Henry Newman (1845)



Ecclesiastical Jurisdiction and Care of Churches Measure 2018

“CARE OF CHURCHES ETC. *General duty:*
35 Duty to have regard to church's purpose

A person carrying out functions of care and conservation under this Measure [...] must have due regard to the role of a church as a **local centre of worship and mission.**”



Your expertise in community is **indispensable** to the health of the building.



Contents

Introduction: Where to Begin

Part I Principles

1 Why Bother? Sustainability, Theology and Mission

2 General Principles

3 Developing a Plan

Part 2 Technologies

4 Specific Technologies

Part 3 Processes

5 Working with Experts

6 Getting Permission

Conclusion

MAKING YOUR CHURCH SUSTAINABLE

A practical guide to getting to net zero

NIGEL WALTER



1. Principles

Climate Crisis – Responsibility and Opportunity



Dunstable Priory, Diocese of St Albans

Net Zero Carbon Target: 2030!

- February 2020:
Church of England General Synod
adopts net zero carbon target of...
- NB: Carbon Reduction v Energy Saving

Fifth Mark of Mission:

- ‘to strive to safeguard the integrity of
creation and sustain and renew the life of
the earth’

Three Documents...



1. Principles

The Practical Path to Net Zero Carbon



- **A. Where do we start?** – Simple actions, easy, fast payback. E.g. basic maintenance, LED lamps, and switching to renewable sources of energy.
- **B. Where do we go next?** – For churches with medium energy use which are used more than once a week – 50%? More expensive, more complex. E.g. insulation in existing roof voids, draught lobbies, creating separately heatable smaller spaces.
- **C. Getting to zero** – For busy churches with high energy use. These are bigger and more complex projects, with longer payback and a greater carbon cost. E.g. new LED lighting systems, photovoltaic panels.
- **D. “Only if....”** – Generally done with other work. E.g. adding insulation during a reroofing project, changing heat source, electric vehicle charging points.
- **E. By exception** – Things NOT to do, because of the risk of irreversible harm to historic fabric, etc.

A practical path to “net zero carbon” for our churches

These recommendations aim to help churches reduce their energy use and associated carbon emissions. They are based on the findings of our church energy audit programme and input from a range of professionals in the church sector.

NOTE: Many of the suggestions below require faculty; please seek input early on. If the church interior is of historic, artistic, architectural or artistic interest, seek professional & DAC advice first, before making changes; stabilising the environment for these interiors is important to minimise cycles of treatment, with their inherent carbon cost.

A. Where do we start? These are actions that nearly all churches can benefit from, even low occupancy churches used only on a Sunday. They are relatively easy, with relatively fast pay back. They are a good place for churches to start, when trying to move towards ‘net zero’.

The building itself:

- A1. Maintain the roof and gutters, to prevent damp entering the building and warm air escaping.
- A2. Fix any broken window panes* and make sure opening windows shut tightly, to reduce heat loss.
- A3. Insulate around heating pipes to direct heat where you want it; this may allow other sources of heat to be reduced in this area.
- A4. If draughts from doors are problematic, draught-proof the gaps* or put up a door-curtain.
- A5. Consider using rugs/floor-coverings (with breathable backings) and cushions on/around the pews/chairs.

Heating and lighting:

- A6. Switch to 100% renewable electricity and “green” gas, for example through Parish Buying’s energy basket.
- A7. Match heating settings better to usage, so you only run the heating when necessary*.
- A8. If you have water-filled radiators, try turning-off the heating 15 minutes before the service ends; for most churches this allows the heating system to continue to radiate residual warmth*.
- A9. If you have radiators, add a glycol based “anti-freeze” to your radiator system and review your frost setting.
- A10. Replace lightbulbs with LEDs, where simple replacement is possible.
- A11. Replace floodlights with new LED units.
- A12. If you have internet connection, install a HIVE- or NEST-type heating controller, to better control heating.
- A13. If your current appliances fail, then replace with A+++ appliances.

People and policies:

- A14. Complete the Energy Footprint Tool each year, as part of your Parish Return, & communicate the results.
- A15. Create an Energy Champion who monitors bills and encourages people to turn things off when not needed.
- A16. Write an energy efficiency procurement policy; commit to renewable electricity & A+++ rated appliances.
- A17. Consider moving PCC meetings elsewhere during cold months, rather than running the church heating.

Offset the rest:

- A18. For most low usage “Sunday” churches, once they have taken steps like these, their remaining non-renewable energy use will be very small. For the majority, all they need to do now to be “net zero” is offset the small remaining amount of energy through [Climate Stewards](#) or other reputable schemes.
- A19. Also, think about your church grounds. Is there an area where you could let vegetation or a tree grow?

B. Where do we go next? These are actions with a reasonably fast pay back for a church with medium energy usage, used a few times a week. Perhaps half of churches should consider them. Some actions cost more than the ones above, and/or require more time and thought. Some require some specialist advice and/or installers. They are often good next steps for those churches with the time and resources to move on further towards ‘net zero’.

The building itself:

- B1. If you have an uninsulated, easy-to-access roof void, consult with your QI about insulating the loft*.
- B2. If you have problematic draughts from your door, and a door curtain wouldn’t work, consult with your QI about installing a glazed door within your porch, or even a draught-lobby*.
- B3. Consider creating one or more smaller (separately heatable) spaces for smaller events.
- B4. Consider fabric wall-hangings or panels, with an air gap behind, as a barrier between people and cold walls.

Heating and lighting:

- B5. Learn how your building heats/cool and the link to comfort, by using data loggers.
- B6. Improve your heating zones and controls, so you only warm what you need.
- B7. Install TRVs on radiators in meeting rooms.

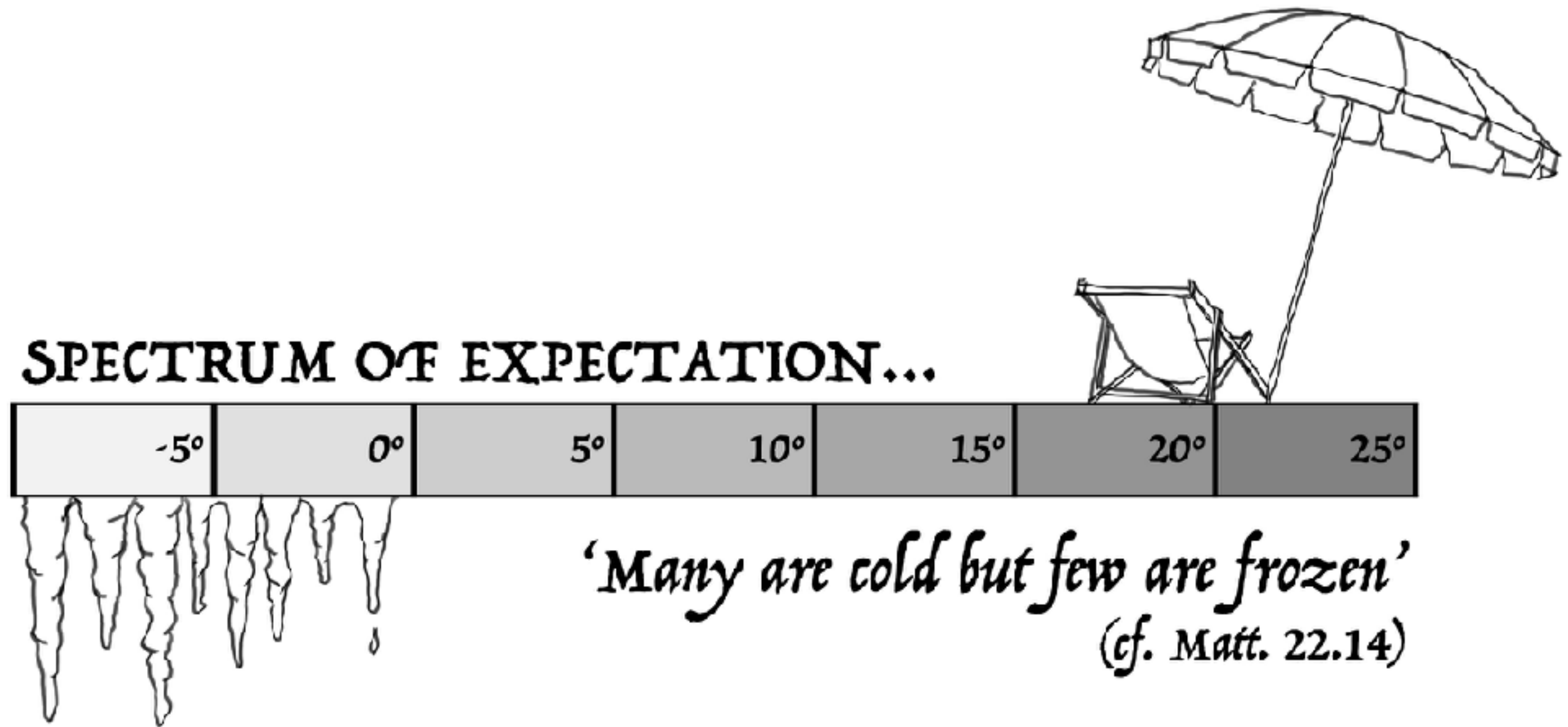
www.churchofengland.org/resources/churchcare/net-zero-carbon-church/practical-path-net-zero-carbon-churches

2. Technologies

Two Greatest Commandments



Making Your Church Sustainable Comfort



2. Technologies

The Basics

...& keep in view:

Where do
we start?...

What we tend
to think of first:

'Whole Life Balance'

- People, building & churchyard as a system
- Lifetime costs, embodied carbon

Maintenance:

- Damp – gutters and drains

Energy Supply:

- 100% Renewable

Use Less

- Smaller spaces?
- Heat the people

Clever Technologies

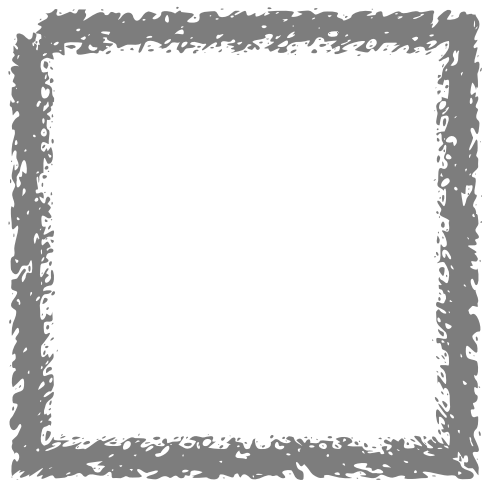
- Solar panels, Heat pumps, etc...

What does the Church
know about **Wellbeing**?

£55bn each year!
or
£1.4m per church...

www.houseofgood.nationalchurchestrust.org

‘the smell of God’



**THE
HOUSE
OF
GOOD**



**THE HOUSE
OF GOOD**

UPDATE 2021

The economic and social value
of church buildings to the UK

**STATE
OF LIFE**



For people who love church buildings

What can the Church
learn...from **Advertising**?

Attention

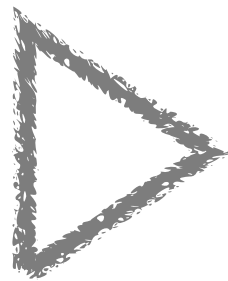
Interest

Desire

Action



WOW!



Welcome



Wellbeing



Worship

June 3, 1911 THE LITERARY DIGEST 1107

Whenever



Whenever
You're Hot, Tired or Thirsty
Work, play or weather hot-brain
tired or body weary-parched dry
or just plain thirsty
Think of and Drink



Coca-Cola

It is delightfully cooling and refreshing-
relieves fatigue of body, brain and nerves
-quenches the thirst-not just wet and
sweet, but vigorously satisfying.

Delicious--Refreshing--Wholesome
5c Everywhere

THE COCA-COLA
Atlanta, Ga.

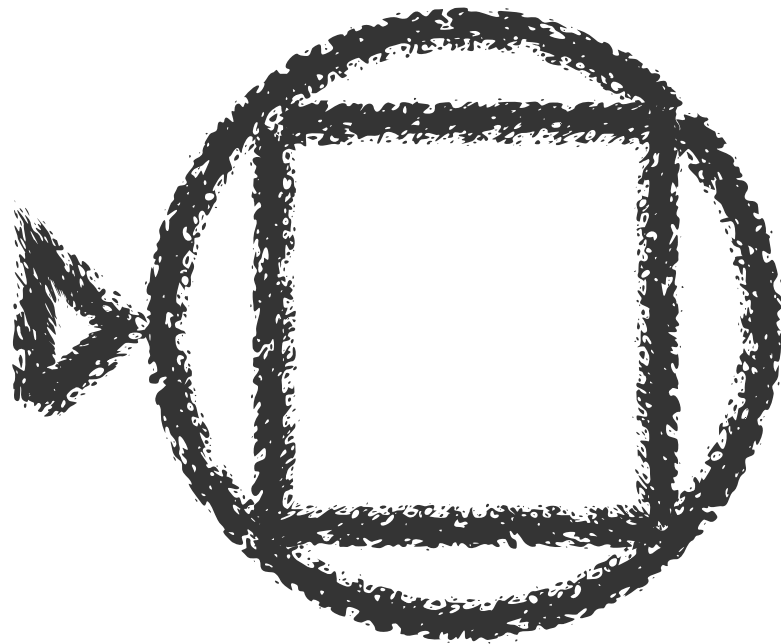
Send for our interesting literature about Coca-Cola

Whenever you see an arrow think of Coca-Cola

Wellbeing **Worship**

Source: <https://blog.designcrowd.com/article/269/the-100-year-evolution-of-print-ads>

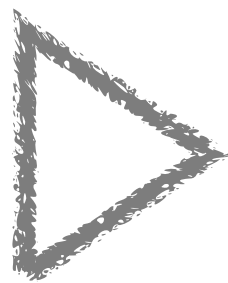
What can the Church learn...from **Advertising**?



Medieval



WOW!



Welcome

July 3, 1911 THE LITERARY DIGEST 1107

Whenever



Whenever
You're Hot, Tired or Thirsty
Work, play or weather hot—brain
tired or body weary—parched dry
or just plain thirsty
Think of and Drink

Coca-Cola

It is delightfully cooling and refreshing—
relieves fatigue of body, brain and nerves
—quenches the thirst—not just wet and
sweet, but vigorously satisfying.

Delicious--Refreshing--Wholesome
5c Everywhere

Send for
our inter-
est, and
about Coca-Cola



Whenever
you see an
arrow think
of Coca-Cola

Wellbeing **Worship**

Source: <https://blog.designcrowd.com/article/269/the-100-year-evolution-of-print-ads>

Example:

St Philip's Cambridge



Example:

St Philip's Cambridge



Example: St Philip's Cambridge

This is not a
building project...

...but a mission
project that
involves a
building.

What does
success look like?



WOW!

Wellbeing

Worship

Welcome

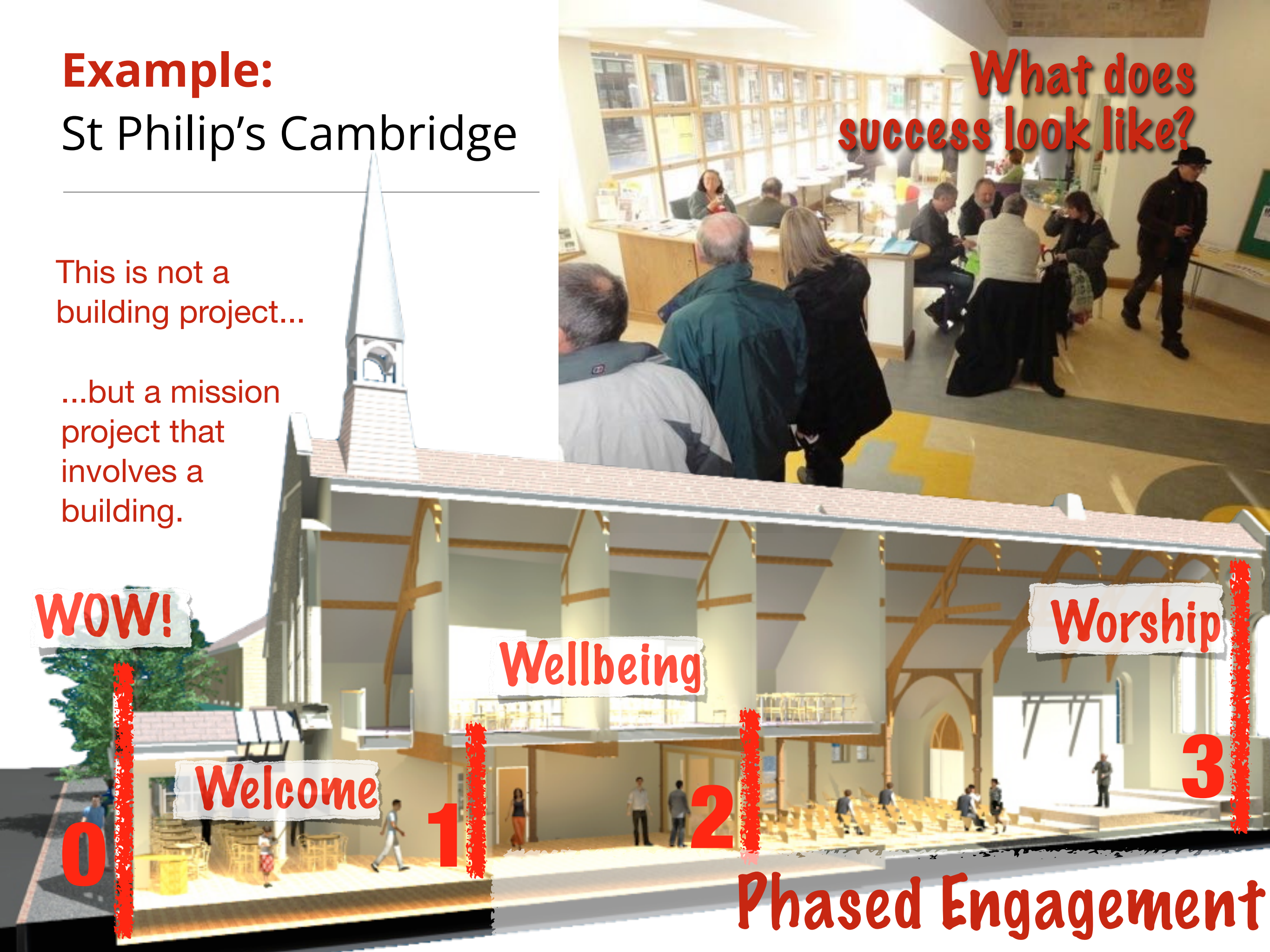
0

1

2

3

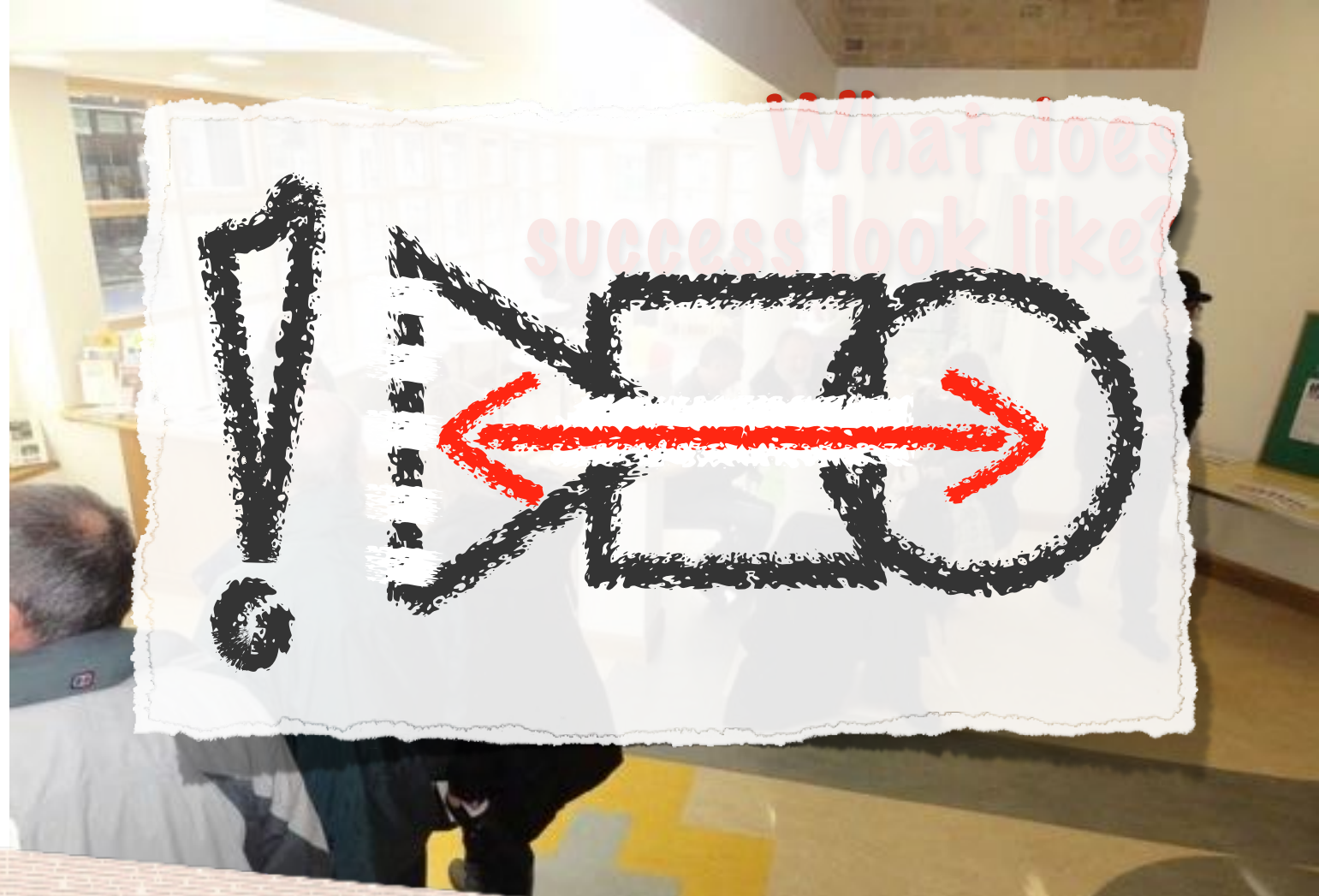
Phased Engagement



Example: St Philip's Cambridge

This is not a
building project...

...but a mission
project that
involves a
building.



WOW!

Wellbeing

Worship

Welcome

0

1

2

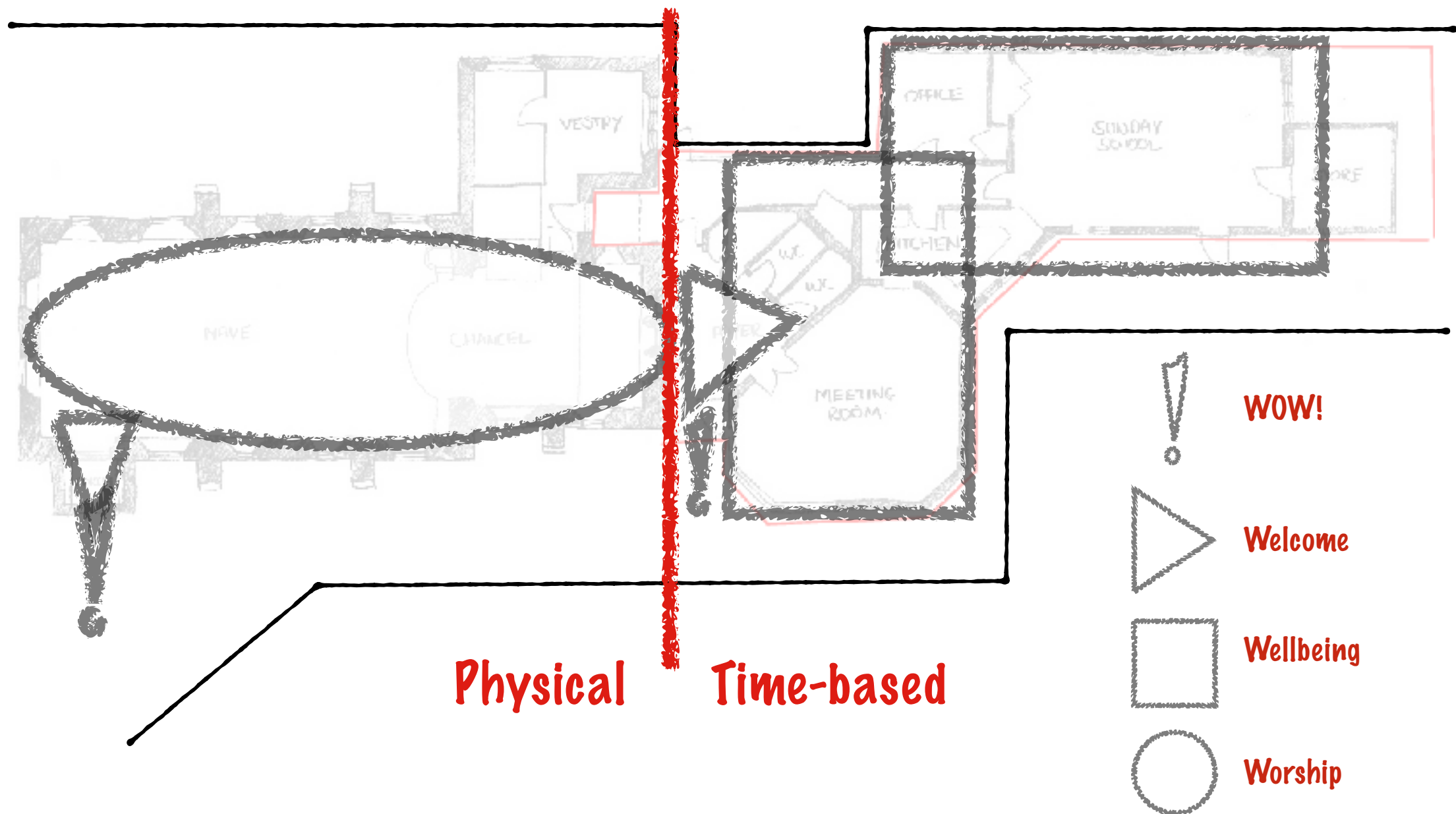
3

Phased Engagement

Church Anatomy

Analysis

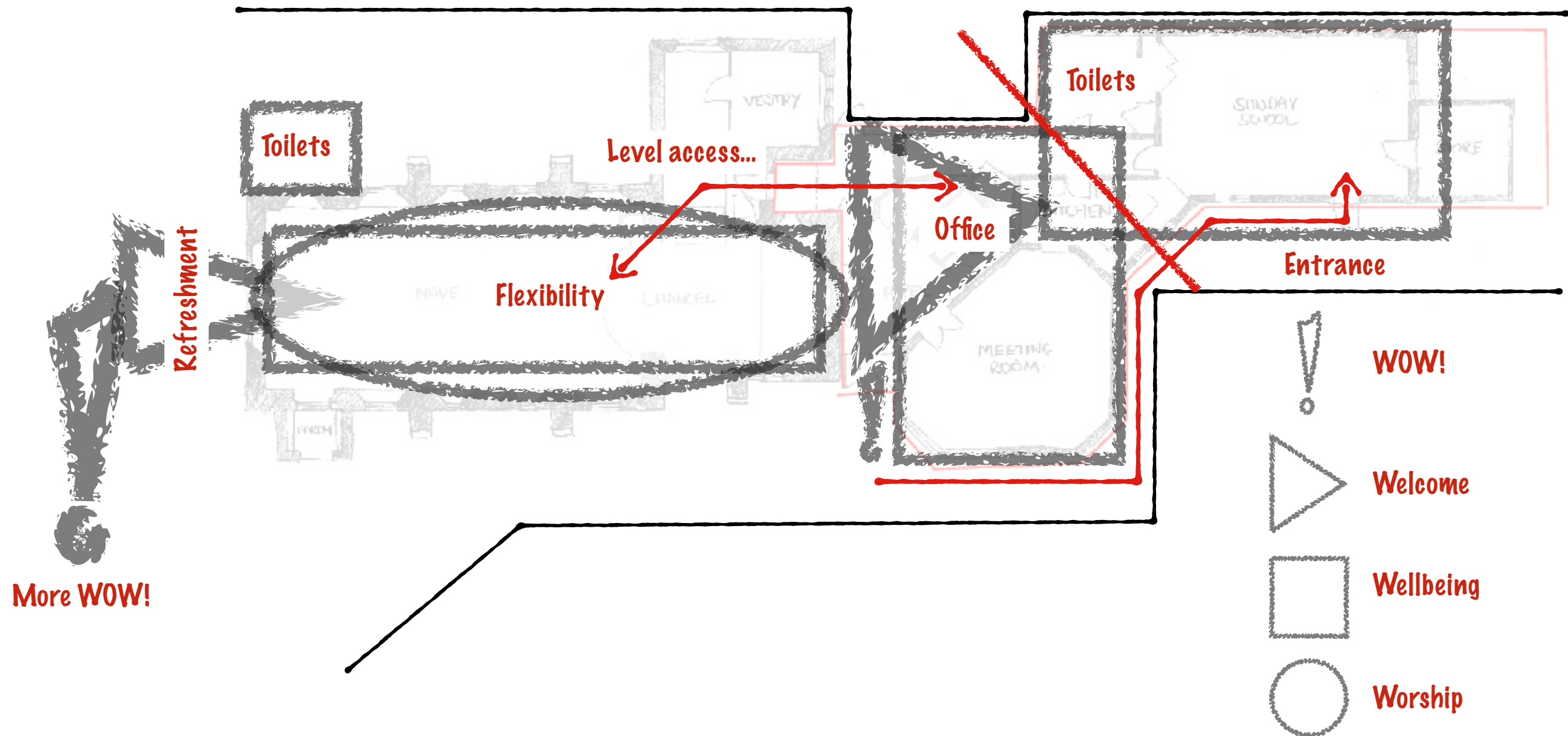
Division



Church Anatomy

Analysis

Division



Examples

St Mary's Houghton



Examples

St Nicholas' Great Wilbraham



Examples

St Paul's Cambridge



Examples

St Mary's Ely



Examples

All Saints Newmarket



Example

Feasibility Study

- General Notes
1. Drawings must not be scaled; work only to figured dimensions.
 2. Drawings must be read in conjunction with all other relevant drawings, schedules and specifications for this project.
 3. All dimensions to be checked on site before and during construction by the Contractor.
 4. Shop drawings of manufactured items must be approved by the Architect before work is put in hand.
 5. The Architect must be notified of any discrepancies immediately.
 6. If in doubt, ask!

revisions			
ID	description	drawn	date
a	Feasibility study 02	JMB	13/09/2024
b	Feasibility study 02	JMB	27/09/2024
c	Feasibility study 03	JMB	15/11/2024

changes

drawing status
FEASIBILITY STUDY

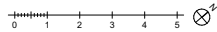
IF THE ABOVE DIMENSIONS DO NOT MEASURE FOUR CENTIMETERS BY ONE CENTIMETER (4 cm x 1 cm) EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

project name
Durham City Methodists
Feasibility Study - Durham City Methodist Churches
North Road Methodist Church & No.27
North Road
Durham DH1 4SG

date: 15/11/2024
scale: AS NOTED
drawn: JMB
paper: A1

project number drawing number revision
0579 1-112 c

Ground Floor Plan - Proposed



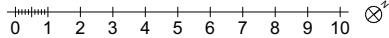
BUS STATION

to roundabout
with A690

NORTH ROAD

to city centre

Zone categories Key	
[Pink Box]	area not surveyed in detail
[Green Box]	Circulation
[Red Box]	Community
[Blue Box]	Hardscaped Areas
[Light Green Box]	Landscaped Areas
[Orange Box]	Offices
[Yellow Box]	Residential
[Teal Box]	Services
[Grey Box]	Storage
[Light Blue Box]	Worship
[Purple Box]	Worship Secondary



Ground Floor Plan - Proposed
1:100

Example

Feasibility Study

- General Notes
1. Drawings must not be scaled; work only to figured dimensions.
 2. Drawings must be read in conjunction with all other relevant drawings, schedules and specifications for this project.
 3. All dimensions to be checked on site before and during construction by the Contractor.
 4. Shop drawings of manufactured items must be approved by the Architect before work is put in hand.
 5. The Architect must be notified of any discrepancies immediately.
 6. If in doubt, ask!

revisions			
id	description	drawn	date
01	Feasibility Study 02	JMB	12/09/2025
a	Feasibility Study 03	JMB	09/10/2025

changes

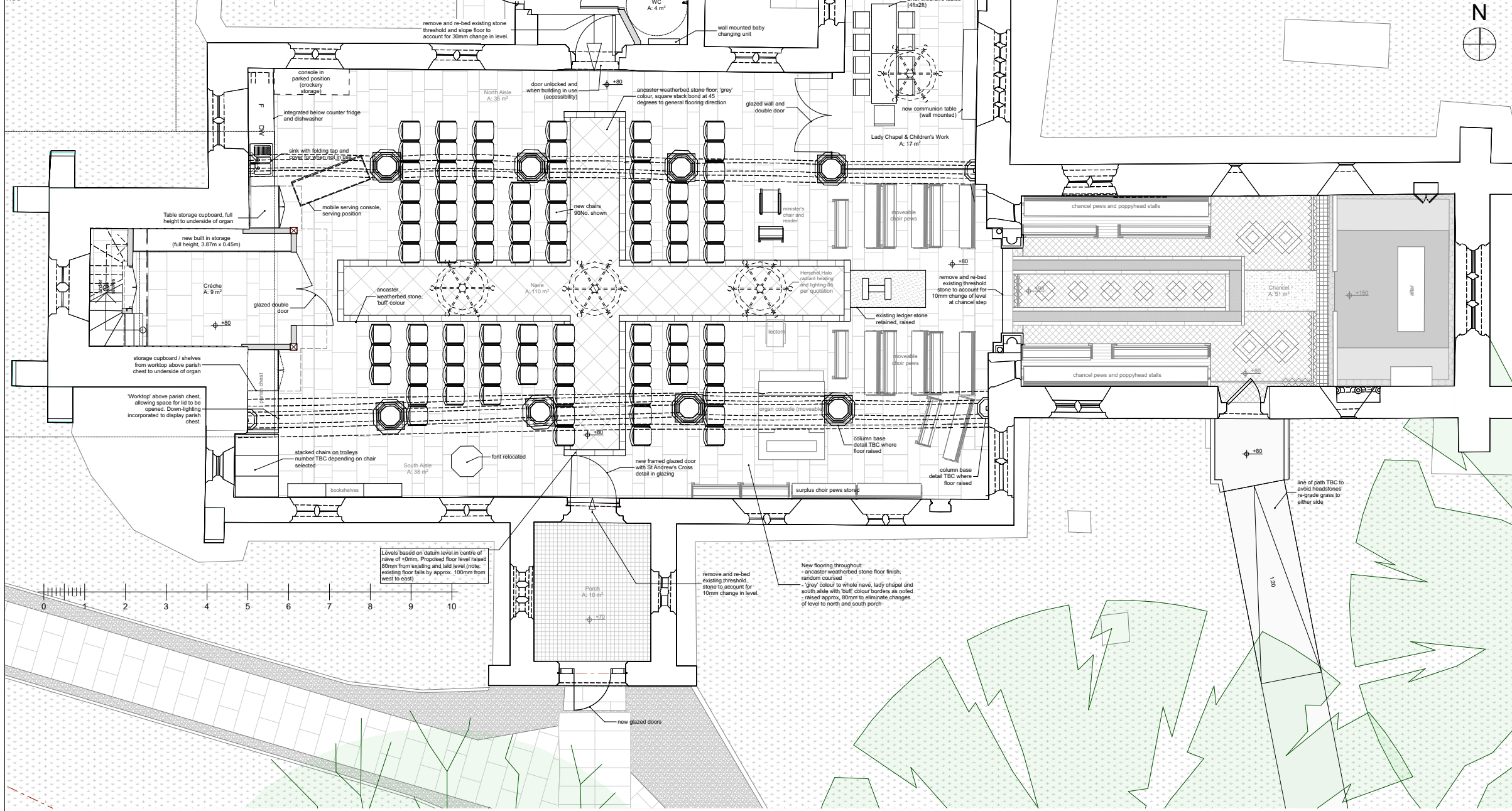
drawing status
FEASIBILITY

IF THE ABOVE DIMENSIONS DO NOT MEASURE FOUR CENTIMETERS BY ONE CENTIMETER (4 cm x 1 cm) EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

project name The PCC of St Andrew's Church St Andrew Mingle Lane Stapleford			
drawing title Mingle Lane Stapleford Cambridge CB22 5SY			
date:	09/10/2025	drawing title	
scale:	AS NOTED	drawing title	
drawn:	JMB/BWH	drawing title	
paper:	A1	drawing title	
project number	0606	drawing number	111
revision	a	drawing title	

Ground Floor Plan - Proposed

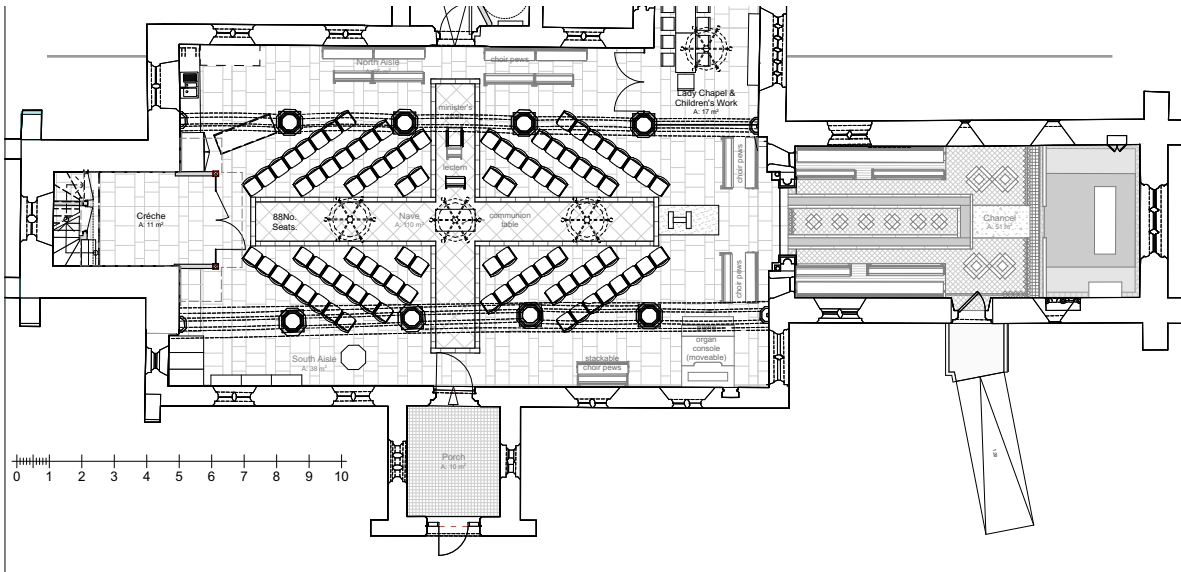
First Floor Plan - Proposed
1:50



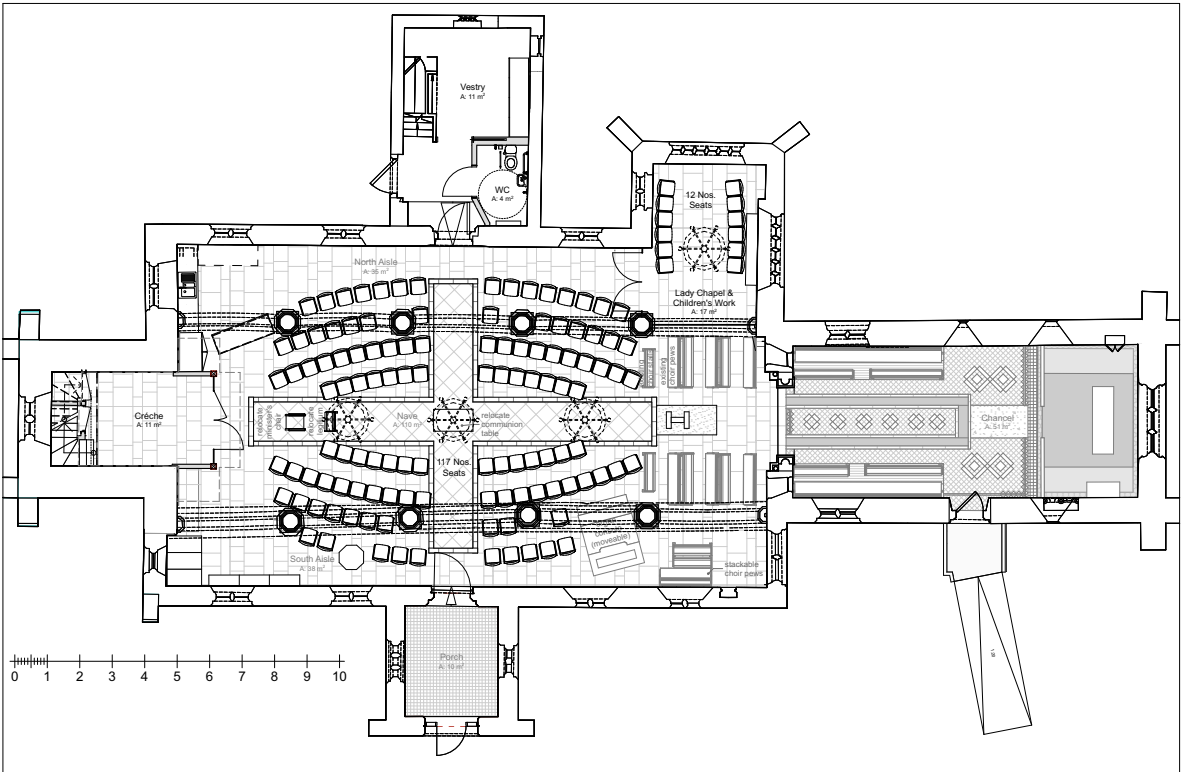
Ground Floor Plan - Proposed
1:50

Example

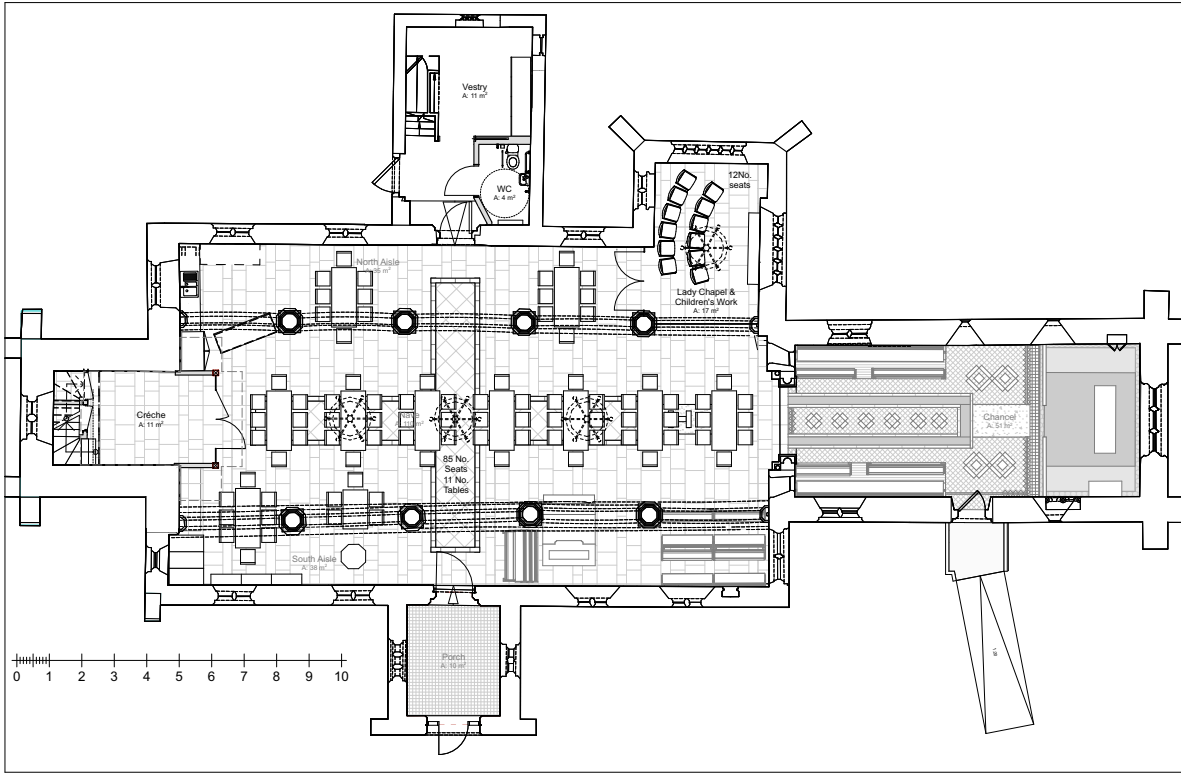
Feasibility Study



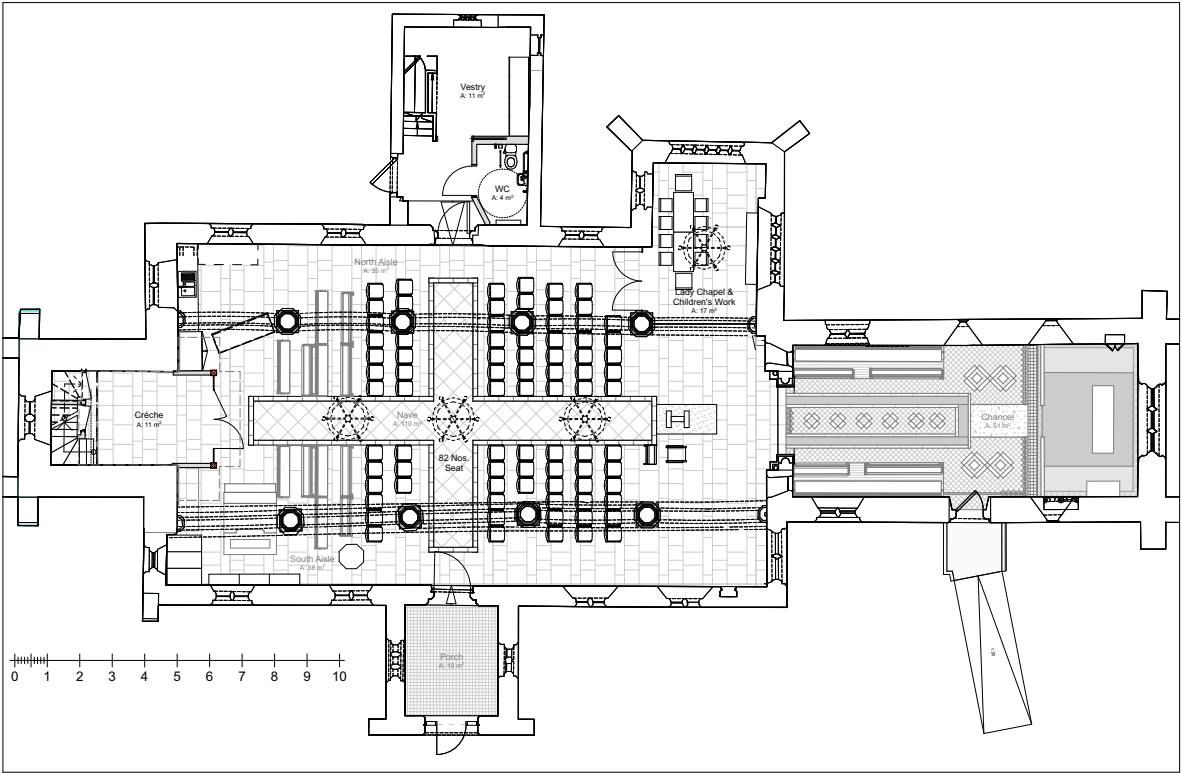
Furniture Variation 01 - Quadrant
1:100



Furniture Variation 02 - Collegiate
1:100



Furniture Variation 03 - Harvest
1:100



Furniture Variation 04 - Choir West
1:100

- General Notes
1. Drawings must not be scaled; work only to figured dimensions.
 2. Drawings must be read in conjunction with all other relevant drawings, schedules and specifications for this project.
 3. All dimensions to be checked on site before and during construction by the Contractor.
 4. Shop drawings of manufactured items must be approved by the Architect before work is put in hand.
 5. The Architect must be notified of any discrepancies immediately.
 6. If in doubt, ask!

revisions	description	drawn	date
01	Feasibility Study 02	JMB	12/09/2025

changes

drawing status
FEASIBILITY

IF THE ABOVE DIMENSIONS DO NOT MEASURE FOUR CENTIMETERS BY ONE CENTIMETER (4 cm x 1 cm) EXACTLY THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

project name
**The PCC of St Andrew's Church
St Andrew Mingle Lane Stapleford**
Mingle Lane
Stapleford
Cambridge CB22 5SY

date: 12/09/2025
scale: AS NOTED
drawn: JMB/BWH
paper: A1

project number: 0606
drawing number: 161
revision: 01

Furniture Layout Options

Fees

Terms and Conditions

archangel Terms & Conditions Church

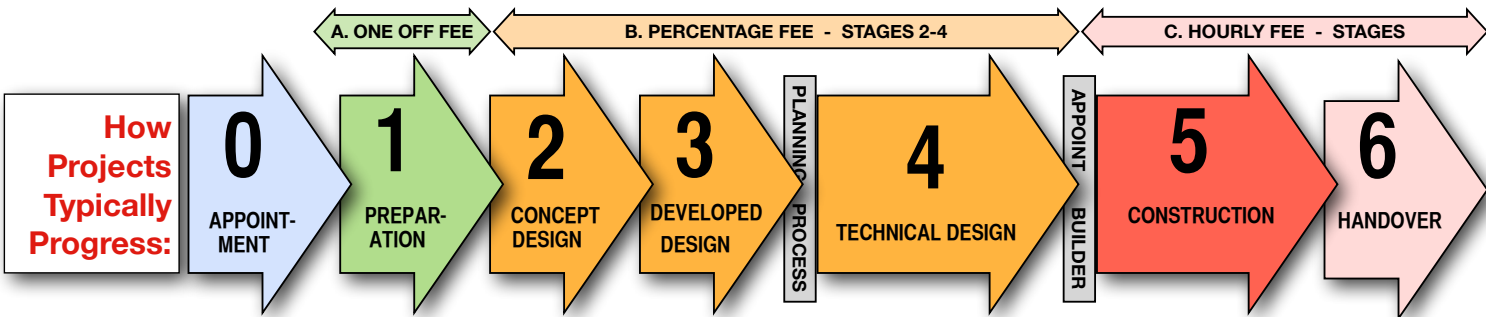
A Preparation & Brief (Stage 1)
With an existing building a detailed measured survey will be needed before any design can be developed in detail. One off fee, typically varying from £500 - £5,000, depending on complexity.

B Design Stages (Stages 2-4)
Our fee for the main body of the works is charged as a percentage of construction cost (excluding VAT). The Percentage Fee decreases as costs increase to reflect a greater economy of scale. The table shows typical percentages for various levels of construction cost, for both new build and work to (non-listed) existing

Church Projects - Typical Fees		
Construction Cost (excl VAT)	New Build	Exist-ing
£50,000	8.3%	10.7%
£100,000	6.8%	9.7%
£400,000	5.6%	8.5%
£1,000,000	5.2%	7.9%
£2,500,000 +	4.8%	7.5%

buildings.
Where a client organises a portion of the works themselves (eg decorating), the project cost on which the fee is based will include an allowance for these items.
Once the Technical Design is complete and the project has been tendered, the fee is calculated on the accepted tender figure, or if none is accepted then on the lowest tender.

C Construction & Handover (Stages 5-6)
You can choose how much involvement you want from us during these stages, which are charged on a time basis; this allows the time expended and thus the cost to be tailored to your required level of involvement.
Our normal service for this phase would include the appointment of the Contractor, administration of a Building Contract, inspecting the works as they progress on site (typically a weekly site visit, depending on the stage of the works), certifying payments to the contractor up to Practical Completion, snagging of the project, and after the end of the rectification period (usually 6 months) making a final inspection and agreeing the final account.
Assuming the contract proceeds in a reasonably straightforward manner then for budgeting purposes allow 40% of the fee for Stages 5-6.



Percentage Fee (Stages 2-4)		
As the project progresses through Stages 2-4 the percentage fee is released stage by stage, as follows:		
stages 2&3	Concept & Developed Design including VR walk-through, submitting of planning application or agreeing permitted development.	50%
stage 4	Technical Design - liaison with Structural Engineer and submission of Building Regulations application. Production of working drawings, Schedule of Work etc sufficient for Contractor's start on site; co-ordination of kitchen design etc.	50%

How It Works
Invoices are issued monthly, reflecting progress to date against the stages above. Each interim payment is based on the most accurate estimate of the construction costs available at the time of billing (excluding VAT).

VAT, Expenses etc	
Points to note:	
● The practice is registered for VAT, so VAT will be payable on both fees and expenses.	
● Payment terms are 15 days from date of invoice.	
● Expenses are charged as follows:	
Mileage - car - per mile	45p
Mileage - bicycle - per mile	20p
Copying / printing - A4 B&W	15p
Copying / printing - A3 B&W	30p
Copying / printing - A1 B&W	£3.00
Copying / printing - A4 Colour	30p
Copying / printing - A3 Colour	60p
Laminating of A3 drawings for site work	£1.75
Postage, other travel expenses, purchase of maps & contract documents etc, are charged at cost.	

Additional Services
We also offer the following additional services, which are charged on an hourly basis at the rates shown:

- Feasibility (Stage 1) - if you are unclear how or whether to proceed with your project we can give some more detailed initial advice / sketches.
- Negotiation with Planners - should you wish us to represent you in pre-application planning meetings
- Project Management - a service Archangel can also provide tailored to your requirements
- Liaison with neighbours on your behalf
- Sustainability modelling - should you wish us to assess the carbon footprint for different forms of construction.

Services We Do Not Provide
You also need to allow for services from others, including some or all of the following; specific costs will vary with the size & complexity of the project:

1. CDM Co-ordinator (Health & Safety)
2. Quantity Surveyor (eg budget costs, full quantities)
3. Planning Fee to Local Authority
4. Structural Engineer (calculation of beams etc)
5. Services Engineer (eg heating design, electrics...)
6. Building Regulations Fee
7. Party Wall Surveyor (if relevant) - £0-£1,000; costs vary depending on the project, your neighbours etc.

Being Organised
It is essential that different people do not give us conflicting instructions; we therefore will only act on an instruction from the incumbent/minister, or a named person designated by the church leadership. Once given, instructions are binding on the church; so please be clear about who is instructing what.

Our Agreement
This sheet provides the basic information on how fees are structured, and other charges. Before we proceed with any works we are required to draw up a formal appointment agreement, which would be on the basis of the latest version of the RIBA Concise Agreement 2010 for the appointment of an Architect, except for the largest projects, which would be under the RIBA Standard Agreement 2010.
enq-t&c-church-2504

Hourly Fees	
For stages charged on an hourly basis, our time is charged at the following hourly rates. These apply to Stages 5-6 and to any Additional Services.	
Director / Consultant	£120
Associate / Senior Architect	£95
Architect / Conserv'n Specialist	£80
Architectural Assistant	£63
Please note these hourly rates are subject to review in the April of each year.	

Thank You!



archangel
ARCHITECTURE WITH SPIRIT

St James' Church Rowledge

What is God asking of us, at this time?

Jack Boyns
Archangel Architects

5th November 2025