

Church

Ecclesiastical buildings are required to fulfil many tasks. The interior lighting of the space is just one aspect that needs to be adaptable to suit the many requirements adequately.

When the building is being used for religious purposes, there tends to be an area that is the focus of the attention, be it the altar, the pulpit or the steps to the chancel in the case of a wedding party. Many churches also open their doors to other activities, ranging from children's playgroups to musical festivals, which may require different areas to be lit altogether.

For functional and aesthetic reasons it is advantageous to be able to control the lighting to suit the application of the space and to go beyond that, using lighting to enhance and create an atmosphere to suit.

A typical church would consist of an entrance porch or narthex, a nave, north and south aisles, a chancel and a side chapel. When designing a new lighting installation, the use of each area needs to be considered and identified as a separate zone for control if necessary. An obvious area is the side chapel, which may only be used for specific services at certain times. It is not uncommon for one of the side aisles to function as a children's play area or meeting area during the week.

Zones are then identified to allow access from one area to another so that all the unnecessary lighting may be switched off. In this instance there is a clergy entrance and a public entrance. Through the use of zones, it is possible to light a straight forward route to the side chapel without the entire lighting of the nave, chancel and south aisle being switched on. However, it is likely that there would be low level lighting provided elsewhere, especially onto the altar in the chancel.

Once the control zones have been identified, lighting for each area needs to be designed. Lighting is an essential element to create focus and atmosphere. Several lighting circuits would be specified in each area as required, to enable individual circuits, hence different lighting, to be controlled separately. For example, in the main nave of a church, there is likely to be the following lighting circuits:

- Pew lighting
- Uplighting of the ceiling
- Lighting of any architectural features
- Lighting for the pulpit
- Lighting for the lectern
- Lighting for the steps/stage area

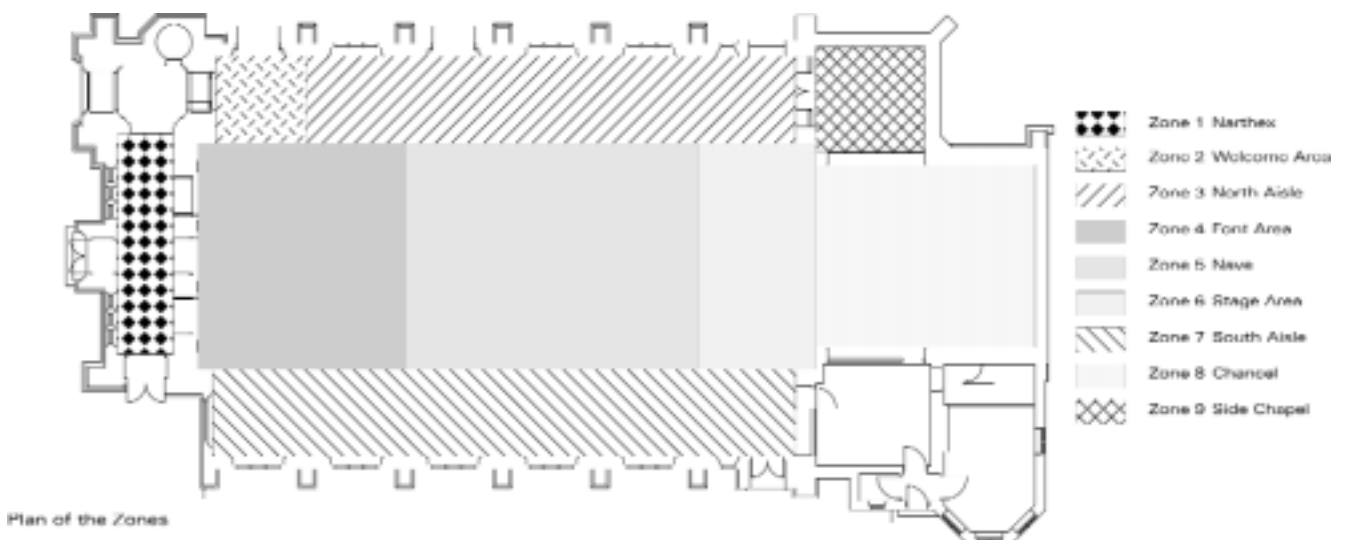
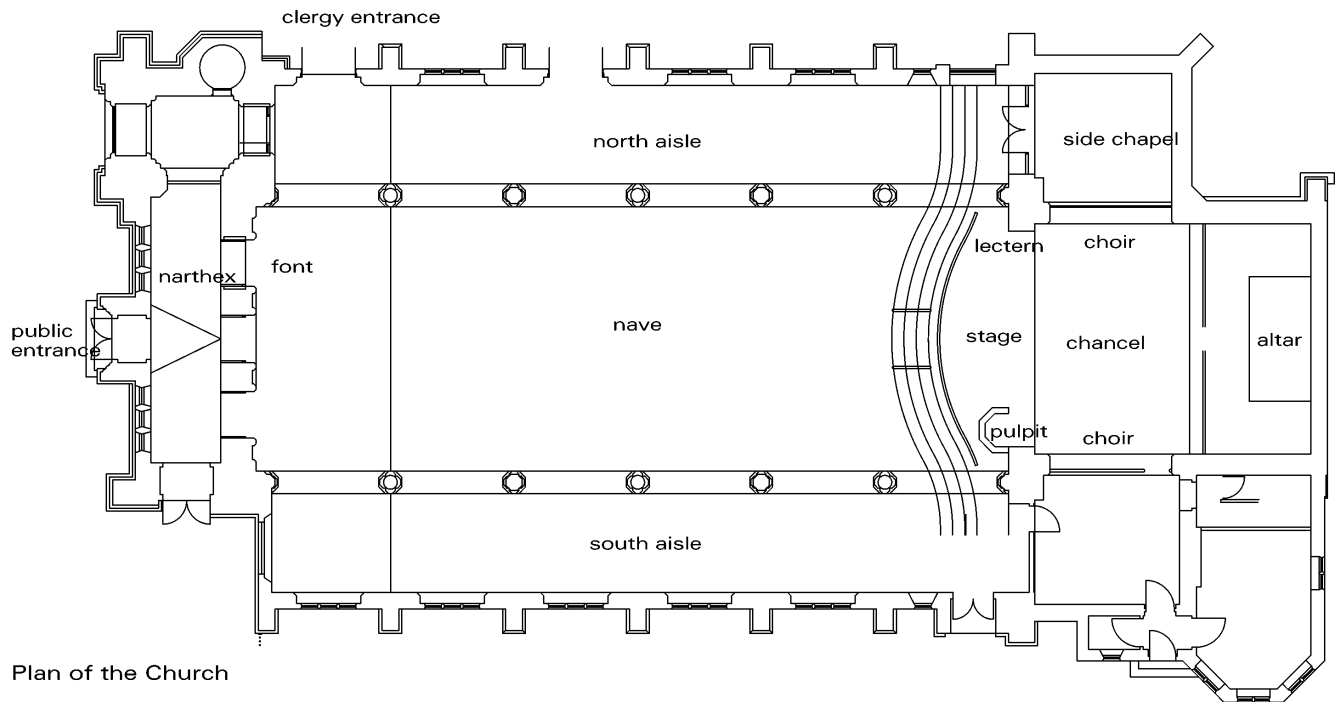


Figure 1

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Plan of the Church

Figure 2

If each of these electrical circuits can be controlled independently, then the lighting can be used to suit the requirements at that particular moment.

The use of dimmable light sources enables the atmosphere to be changed by the lighting easily. However, for certain situations, for example the uplighting of a ceiling, it may be advisable to use a discharge source that cannot be dimmed, and would only be switched on or off by the lighting control system.

As there is control over each lighting circuit and zone, lighting scenes can be generated and stored in the memory of the Source Controllers. This then enables the scenes to be named and recalled easily. For each scene, the individual lighting circuits are considered and a lighting intensity for that circuit specified for that particular scene. A number of lighting scenes are then created, that cover the general use of the space.

Typical lighting scenes may include:

Scene 1: General day time lighting Functional lighting would be provided throughout the church, with an emphasis on the altar.

Scene 2: Morning Service held in the Nave Low level lighting in all areas except the side chapel, a higher level of light in the nave and chancel than the side aisles and an emphasis on the altar. Note that

there must be sufficient ambient light to enable the congregation to read from their hymn sheets and prayer books.

Scene 3: Midday Service held in the Side Chapel Low level lighting in all areas, a higher level of light in the welcome area, north aisle and side chapel, emphasis on the altar in the side chapel. Some light onto the main altar.

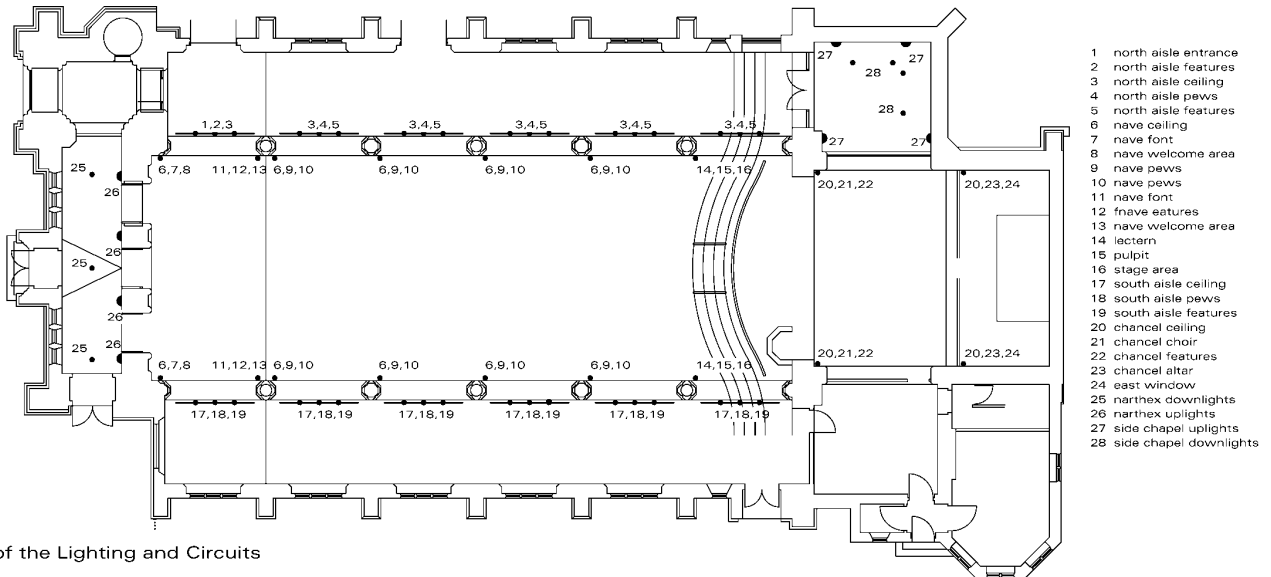
Scene 4: Evening Service held in the Nave Low level lighting in all areas, a higher level of light in the nave and chancel than the side aisles and an emphasis on the altar. As there is less daylight in the space, the architectural lighting in the church can be used to greater effect than in scene 2.

Scene 5: Midnight Service held in the Nave Low level lighting in all areas, a higher level of light in the nave and chancel than the side aisles and an emphasis on the altar. As there is no daylight in the space, the architectural lighting in the church can be used to even greater effect than in scene 4, possibly with very little lighting onto the pews in the nave.

Scene 6: Wedding Service Low level lighting in all areas, a higher level of light in the nave and chancel than the side aisles and an emphasis on the steps/stage area and the altar.

Scene 7: Baptism Service Low level lighting in all areas, a higher level of light in the nave and chancel than the side aisles and an emphasis on the font area and the altar.

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Plan of the Lighting and Circuits

Figure 3

Scene 8: Children's play time in the South Aisle Low level lighting in all areas, a higher level of light in the entrance, welcome and South Aisle. Some light onto the main altar.

Scene 9: Meetings held in the North Aisle Low level lighting in all areas, a higher level of light in the entrance, welcome and North Aisle. Some light onto the main altar.

Along with the pre-set scenes, it is useful to be able to control some of the lighting circuits separately, for example, during an evening service, there may be a reading from the pulpit, so the lighting onto the pulpit needs to be increased. This can be a separate scene, or the use of faders for selected circuits can be incorporated.

The control of the lighting scenes needs to be as straightforward as possible. At the main clergy entrance, there needs to be a simple on/off for the most used scenes. Then at a suitable point in the church, probably alongside the sound control desk, additional control is required. A Touch Screen panel that indicates additional control is required. A Touch Screen panel that indicates a plan of the church and has all the pre-set scenes identified is the ultimate solution, Software enables the lighting control to be designed specifically around that particular space and the way in which it is used. The Touch Screen control can simply be plugged in wherever control points are installed throughout the church. A simpler solution may be to have a scene setting button panel with

faders for selected circuits. For example a fader for the lectern, pulpit, stage area etc., that can be raised and lowered when required without effecting the lighting in the rest of the church.

In separating the control in this way, the everyday users of the church are faced with simple buttons to press upon entering depending on their use of the church at the time. It is only when the church is being used for a service that the control becomes more involved.

Control Panel Considerations

The control panels need to be functional and practical and at the same time provide the level of control necessary from various points throughout the building.

At the main entrance, the control panel would either be installed behind a lockable panel or the panel itself would be on display in discrete position but with a key locking switch on the face plate. This key switch would enable or disable the panel. The keys being only in the possession of the clergy and church wardens. The panel would then have (say) four standard scenes plus off. The off scene would have a slow fade time to enable people to leave the church before the lights fade fully off.

At the Clergy door, a simple two button control panel would be installed. It is assumed that this would be the primary access when the church is not in use, and would be used for cleaners and for

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private access by the clergy. The 'on' button would select a 'working' scene that would select long life lamps, such as the metal halide uplighters. These would provide a very functional lighting scene, (say) for cleaning, with minimum energy consumption and long lamp life. Note that it is possible to program a time out on this button, such that the lighting would automatically turn off after (say) thirty minutes. This is not ideal with metal halide lamps as there is a sudden turn off. But with dimmable lamps the lighting could simply fade out over (say), twenty seconds. The 'off' button would be a grand master and would turn off all of the lighting in the building.

Side Chapel. This would have a local control panel. It would provide four pre-set lighting scenes with a master raise and lower over ride pair of buttons. There would also be an off button, and this would only effect the local zone.

Pulpit. The control panel here would have nine buttons and these would control all of the scenes mentioned earlier. Note that this panel would not have an off button. This is to avoid a nervous presenter plunging the congregation into total darkness!

Portable LCD Touch Screen. This unit would have full functionality. It would have a plan of the building in graphical form. By touching an area it would be possible to drill down into a zone. Then with the use of toggle (virtual) buttons, individual circuit levels can be set. In addition it would have master control of all of the pre-programmed lighting scenes. Another feature available here is that of virtual faders. There could be one for each circuit. This could then be used rather in the manner of a theatre lighting desk. This unit could be plugged into several places in the building (where any other control panel is via the hidden RJ12 socket) or into a dedicated socket at the Sound desk position.

Figure 4

