

FRAMED FABRIC STRUCTURES

Framed Fabric structures are constructed using a steel or timber portal frame with a stretched fabric covering the roof. These buildings can be clad in a variety of options from fabric through to masonry. Due to building regulations this type of structure cannot be heated (unless they are insulated) and therefore it is recommended that dehumidification equipment (or alternative) is installed to reduce condensation. To reduce construction costs these structures can be configured with columns in between the courts however this configuration requires the venue to have larger court run offs.

FRAMED FABRIC STRUCTURE WITH INTERMEDIATE COLUMNS



FRAMED FABRIC STRUCTURE



Design Considerations

- The frame is normally installed using a reinforced concrete ring beam or concrete pads and will require drainage.
- The membrane will last 15 – 20 years and the frame will last 50 years.
- The structure cannot be heated.
- Due to lack of heating condensation can be a problem. The installation of a performance acrylic surface is a risk unless a double roof skin and/or dehumidification equipment is installed.
- Side elevations can be opened to provide ventilation.
- The ring beam and drainage must be designed by structural engineer to accommodate the nature of the site and ensure a design warranty. The drainage must meet the requirements of the Local Authority building regulations.
- The only utilities that are required for these buildings is power to the lights and low level internal power. Therefore the running costs for this building are low. This could be provided by a single phase power supply however it is recommended that 3 phase power supply is installed to accommodate future expansion as well as any clubhouse. If this is not available close to the site then the venue should engage an electrician to install the 3 phase power supply.
- These structures are lit internally by hanging lighting systems. It is recommended that clubs engage a specialist lighting consultant to work with the manufacturer to install lighting that provides a minimum of 500 lux on the PPA. (Please refer to technical framed fabric guidance sheet for lighting criteria).
- These structures require additional space around the court playing area to accommodate the ring beam, drainage, fire escapes and security fencing. The table below indicates the space required and the budget costs:-

No. of courts	Length (m)*	Width (m)*	Cost (£)
2	36.75	33.70	£480 - 620k. This cost is to cover existing courts and is dependent upon frame design. To cover new macadam courts add £40k per court.
3	36.75	48.33	£650k - 800k. This cost is to cover existing courts and is dependent upon frame design. To cover new macadam courts add £40k per court.
4	36.75	62.96	£800k - £1.2m. This cost is to cover existing courts and is dependent upon frame design. To cover new macadam courts add £40k per court.

*These are minimum dimensions that can be used for recreational play and low level competition. If possible the length and siderrun should be extended by 1m to enable a better playing environment. These measurements allow for 1 m width outside of the dome for ring beam drainage and fencing. These costs do not include fees (8%), contingencies (10%), utilities or VAT.

For further technical details please refer to the LTA technical guidance notes on Framed Fabric buildings.

HOW TO APPROACH YOUR PROJECT

If you are starting out on construction project, it is inevitable you will have a lot of questions and it can be a daunting prospect. The steps should help in developing an indoor facility.

1. Measure your proposed site to see if a framed fabric structure can fit.
There are many apps that you can use to measure your site using google maps. An example is GPS Fields area measure app or you can use a tape measure.
2. Develop a business plan that provides information on how the facility will be managed and sustainable. *(See guidance note)*
3. Develop a budget cost plan and establish how the project will be funded.
Engage with funding partners and submit funding applications. Check the criteria of each funding partner and make sure you have adequate tenure on your site.
4. Engage consultants to develop a project specification and apply for planning permission *(For further information on how to apply for planning then please refer to LTA guidance note).*
5. Obtain 3 quotations from SAPCA members. It is recommended that a main contractor is used to construct the entire project. This will provide a single warranty for the development.
6. Once planning permission has been received finalise all funding for the project and if funders require security then engage solicitors to establish legal security on site.
7. Gain written permission from funders to start on site and ensure planning permission has been discharged.
8. Manage the project on site and drawdown funding from funders. Once the project is complete obtain the operation and maintenance manuals form the contractor. These documents will provide information on how to operate the air hall and maintain it in the long term.

