

AIRHALL STRUCTURES

Covered courts provide venues with more opportunities to offer year round tennis for members and pay and play users; and deliver a sustained year round coaching programme. Enabling venues to grow participation and increase membership. This document provides information on the options available and advice on how to plan and deliver your project.

AIR SUPPORTED STRUCTURES

These structures are the cheapest way to cover tennis courts and can be classified in 2 variants:-

1. **Single skin airhall** - a transparent single membrane structure
2. **Double skin airhall** - a translucent opaque membrane structure with internal lighting.

SINGLE SKIN TRANSPARENT MEMBRANE AIRHALL



Design Considerations

- These air supported structures use a transparent membrane that is attached to a reinforced concrete ring beam using steel cables.
- The ring beam and drainage must be designed by a 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.
- These airhalls can be used seasonally. If they are to be taken down in the summer then storage will be required on site.
- These airhalls are lit using external floodlights. The airhall skin will reduce the lighting levels and therefore the existing lights should provide adequate light to enable 400 lux to be achieved on the principle playing area and 300 lux on the total playing area.
- These airhalls require a 3 phase electrical supply and therefore the venue must make sure this is available close to the airhall or if not engage an electrician to install the 3 phase power supply.
- These airhalls can't be heated and condensation can be an issue, which makes the airhall less well suited to acrylic courts.
- Due to the nature of the skin it can be vandalised and security fencing is recommended.
- The membrane will need to be replaced within 7 years. Approximate cost - £50,000.
- These airhalls 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	37.77	34.92	£135k - £155k covering existing courts with either using new or existing lights. To cover new macadam courts add £40k per court.
3	37.77	49.55	£170k - £195k covering existing courts with either using new or existing lights. To cover new macadam courts add £40k per court.
4	37.77	64.18	£200k - £235k covering existing courts with either using new or existing lights. 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 side run should be extended by 1m to enable a better playing environment. These measurements allow for 1 m width outside of the airhalls 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 airhalls.

Annual running costs

- £5-10k per annum to cover lighting and inflation
- Sinking fund - £5-8k

DOUBLE SKIN TRANSPARENT MEMBRANE AIRHALL



Design considerations

- These airhalls have a more robust membrane and can be supplied with 5 grades of membrane thickness which can be tailored to each site for structural stability.
- The membrane is heavier and more difficult to take down and store if it is to be used as a seasonal airhall.
- The membrane is secured to a reinforced concrete ring beam and will require drainage.
- The ring beam and drainage must be designed by a 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.
- These airhalls can be heated at an additional cost of £15k. The heating will require a gas supply and is expensive to run and therefore heat should be kept to a minimum.
- These airhalls require a 3 phase electrical supply and therefore the venue must make sure this is available close to the airhall or if not engage an electrician to install the 3 phase power supply.

- These airhalls can accommodate any court surface.
- Although these airhalls are stronger than single skin airhalls they can still be vandalised and therefore a security fence is advisable.
- The membrane has a life expectancy of 15 years. The manufacturer should offer a warranty of 10 years.
- Inflation equipment is of a higher quality and lasts longer.
- These airhalls are lit internally either by hanging lighting systems or uplighters. It is recommended that venues 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 airhall guidance sheet for lighting criteria).
- The inner skin of these airhalls can be removed which will reduce the cost by at least £20k, however the insulation properties will be reduced.
- Airhall can be managed from a remote app on a mobile phone or tablet for an extra cost.
- These airhalls 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 from the airhalls:-

No. of courts	Length (m)*	Width (m)*	Cost (£)**
2	37.77	34.92	£250k. This cost is to cover existing courts. To cover new macadam courts add £40k per court.
3	37.77	49.55	£330k. This cost is to cover existing courts. To cover new macadam courts add £40k per court.
4	37.77	64.18	£400k. This cost is to cover existing courts. 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 side run 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.

** These costs are for a double skin dome and do not include heating.

For further technical details please refer to the LTA technical guidance notes on airhalls.

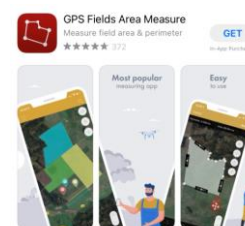
Annual running costs:-

- £10 – 15k per annum to cover lighting and inflation
- Sinking fund - £7k

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 an airhall 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. *(Please see LTA guidance note on how to write a business plan).*
3. Develop a budget cost plan and establish how the project will be funded. If required 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 to develop the project.
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 the venue with 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 make sure all planning permission has been discharged.
8. Manage the project on site and drawdown funding. Once the project is complete obtain the operation and maintenance manuals from the contractor. These documents will provide information on how to operate the air hall and maintain it in the long term.

OPERATIONAL CONSIDERATIONS

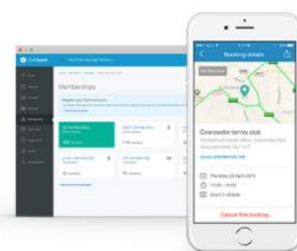
Adding indoor courts will most likely require a change to the way you manage your venue, court allocation and bookings. Although each venue is different below are areas to consider:-

Managing bookings / programming

- Need to balance the time allocated to the coaching programme, member and pay and play bookings.
- Think about your charging levels for members, non members and coaches.
- How will you manage bookings online for members and non members?
- How will members and non members access the courts, have you considered a gate access system?
- How will you ensure the site is secure at the end of the day?

Management / sustainability

- Airhall technology now includes an app to help you manage the airhall and its inflation levels and reduce risk.
- Factor in running costs and sinking fund requirements. If your airhall is seasonal you will need to consider the cost of taking the airhall down and have appropriate storage on site.
- The manufacturer will provide an annual maintenance plan to follow to maximise the life of the airhall.
- Insurance - insurers will typically charge a rate of 2% on airhalls. Therefore a £50,000 airhall would be £1,000 + insurance premium tax (£1,120 total). Loss of income can also be covered.



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