# Livestock Housing

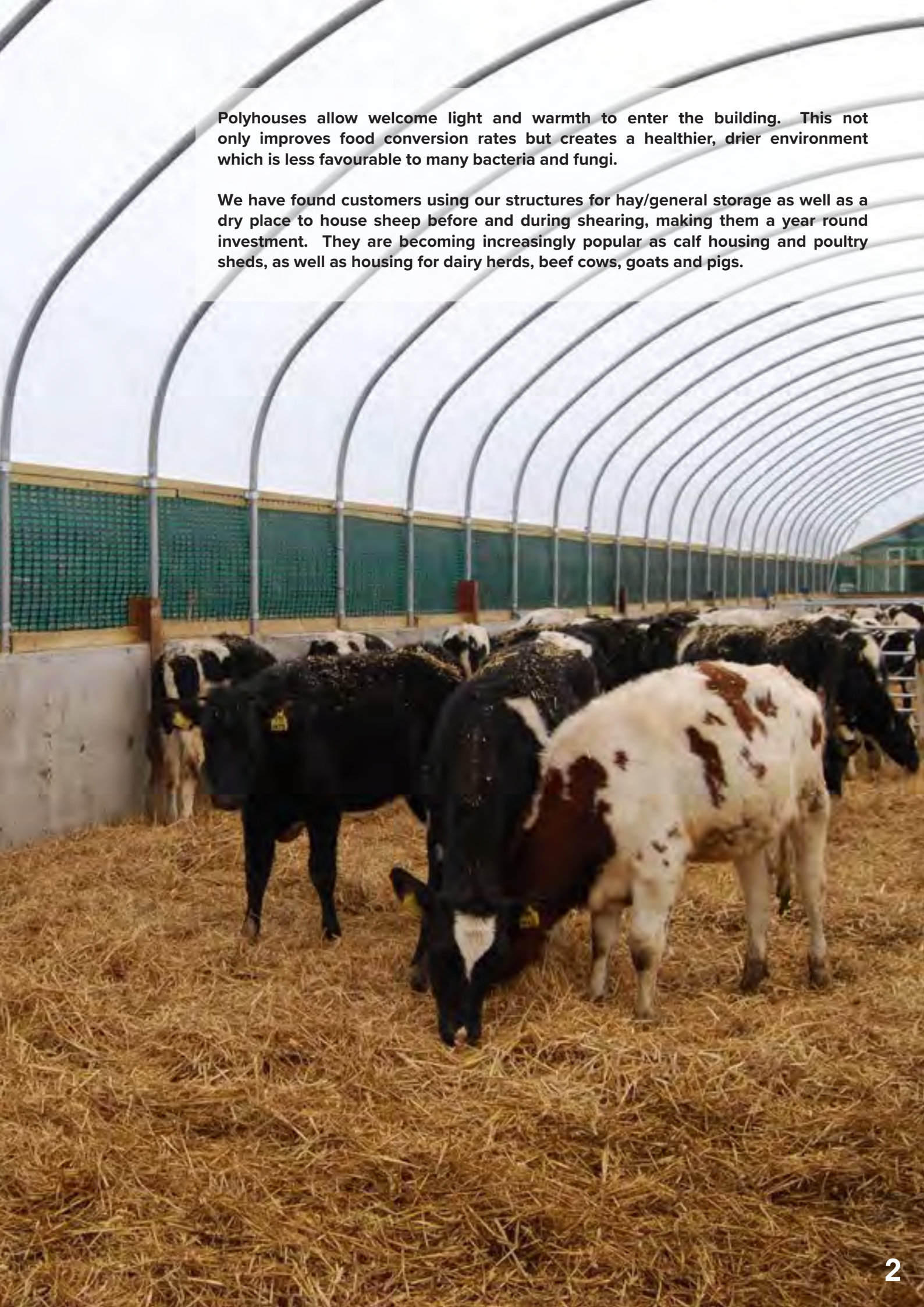
northern polytunnels

built to last

# Will you be ready for lambing season?

**With over 50 years of experience in the design and manufacture of polyhouses, our staff can ensure you get the best service and the highest quality product from the UK's largest polytunnel manufacturer.**

**The notion that a polyhouse is a poor man's livestock house is certainly no longer the case. Advancements in structural design, developments in covering materials, and improved engineering techniques make them a truly credible, inexpensive alternative to traditional livestock buildings.**



**Polyhouses allow welcome light and warmth to enter the building. This not only improves food conversion rates but creates a healthier, drier environment which is less favourable to many bacteria and fungi.**

**We have found customers using our structures for hay/general storage as well as a dry place to house sheep before and during shearing, making them a year round investment. They are becoming increasingly popular as calf housing and poultry sheds, as well as housing for dairy herds, beef cows, goats and pigs.**

# BENEFITS, LAYOUT AND SHEEP ALLOWANCES

Ensure sufficient space for lying and feeding. Competition for space can contribute to serious health and welfare problems as nutritional and social stresses increase in the run up to lambing.

The length of the forage feed face and trough space are more important than the overall space allowance, ensuring all stock have access to forage and concentrate without unnecessary struggling or competition.

Ewes that are lame, sick or affected by foot rot should be separated in to a hospital area. This allows for special attention and prevents any problems spreading throughout the flock.

Set up pens for ease of management in terms of cleaning, stock handling and movement.

Ensure water bowls/troughs are designed and located to minimise fouling and freezing.

Set up feed troughs so wasted feed can be removed easily and regularly.

- Short -wave radiation from daylight creates warmer and drier housing conditions - reducing bedding costs.
- Increased use of natural light - lower energy requirements.
- Warmer environment increases food conversion ratio - lower the feed cost.
- Content livestock / improved welfare, lower lamb mortality.
- Reduced incidence of twin lamb disease.
- Lower cost than traditional buildings.
- Natural light keeps potentially harmful bacteria, fungi, moulds and odours at minimum levels.
- Light provides natural vitamin enriching sunshine and warmth for livestock.

**The space allowance and group size for housed sheep should be determined according to age, size and class. Some examples of good current practice set out below...**

| Catagory of sheep | Lying space ($m^2$ per ewe) | Trough space per ewe (Concentrates) | Forage face per ewe (Restricted forage) |
|---|---|---|---|
| Large ewes (Over 80kg live weight) | 1.2-1.4$m^2$ floor space per ewe during pregnancy | 50cm | 28cm |
| Large ewes after lambing with lambs at foot up to six weeks of age | 2.0-2.2$m^2$ floor space per ewe with twin lambs | 50cm | 28cm |
| Medium ewes (60-80kg live weight) | 1.0-1.2$m^2$ floor space per ewe during pregnancy | 45cm | 25cm |
| Medium ewes after lambing with lambs at foot up to six weeks of age | 1.8-2.0$m^2$ floor space per ewe with twin lambs | 45cm | 25cm |
| Small ewes (40-60kg live weight) | 0.9-1.0$m^2$ floor space per ewe during pregnancy | 40cm | 20cm |
| Small ewes after lambing with lambs at foot up to six weeks of age | 1.7-1.8$m^2$ floor space per ewe with twin lambs | 40cm | 20cm |
| Lambs up to 12 weeks old | 0.5-0.6$m^2$ floor space per lamb | - | - |
| Lambs and Sheep 12 weeks to 12 months old | 0.75-0.9$m^2$ floor space per lamb/sheep | - | - |
| Rams | 1.5-2.0$m^2$ floor space per ram | - | - |

# SHEEP HOUSE SPECIFICATIONS

## Hoops (Steel Arches)

Our livestock houses are the strongest of their kind. For our single span polyhouses we space the hoops either 5ft or 6ft apart. Wider hoop spacing's (up to 7ft or 8ft apart) can be catered for, but we would only recommend this for our smaller polyhouses which are being built in relatively sheltered locations. Generally, 5ft hoop spacing's are the most widely used for our 24ft, 27ft and 30ft wide polyhouses, especially where higher wind speeds and heavier snow loads are expected. 6ft spacing's are available if required, usually where the weather is less severe. Remember, more steel equals a stronger structure!

We use 50mm diameter pre-galvanised steel tube for our 18ft and 21ft wide polyhouses, and 60mm tube for everything above. All hoops have a 1.5mm wall thickness, and our steel tube is galvanised both inside and out.

## Straight Sides

All our polyhouses have straight sides to allow for a full working width. The height of the straight sides increases in relation to the tunnel width. Extra high structures are also available.

## Foundations

Heavy duty galvanised foundations tubes (ground tubes) with a 3.5mm wall thickness give increased protection from corrosion and provide a sound footing. Our unique design allows the polytunnel arches to be raised up on the foundation tubes (after the polythene cover has been fitted) to achieve a drum-skin finish.

**Foundation options available:**

**Traditional foundation tubes**

Suitable for both single-span and multi-span polytunnels. A hole measuring approx. 50cm x 50cm x 50cm deep ($0.125m^3$) is required for each foundation tube. This is filled with a standard foundation concrete mix (C20/GEM3), leaving half of the foundation tube protruding above ground level.

**Base plates**

For bolting on to an existing concrete base. Suitable for single-span and multi-span polyhouses.

## Polythene Tensioning

All our polyhouses have our unique polythene tensioning system. After the polythene cover has been secured, the steel arches (hoops) are raised-up on the foundation poles and locked in position. This effectively pushes the hoops up in to the polythene cover, thus making it drum-skin tight. A tight cover will last much longer, as the wind will simply glide over it, whereas the wind will 'pull' at a loose cover. When the time eventually comes to recover your polyhouse, the hoops are released back down again - making the whole process much easier.

## End Frames

**Timber Option**

Made from 75mm x 75mm (3" x 3") pressure treated timber. The door posts can be set at your required width and height but with a max. height of 11ft high if the door posts are positioned 10ft apart. The height may vary between different polyhouse widths.

**Steel Option**

Galvanised steel box-section uprights (90mm x 50mm x 3mm) with a steel box-section door lintel. Adjustable height gate fittings & latch included. Steel door frames should never need replacing, unlike treated timber end frames which will eventually rot at ground level. Steel door frames will also take a lot more 'knocks', and will easily support the weight of a steel gate.

Doors and gates are not normally supplied, however door blinds can be supplied, see **page 8** for details.

Traditional Foundation Tube

Base Plate

## Side Rails and Ventilation

100mm x 50mm (4” x 2”) treated timber side rails are fitted to both sides, approx. 1m (3ft 3in) off the ground. The sides are then clad with a heavy duty, extruded windbreak mesh (tensile strength of 30kN/m) giving a 63% wind protection factor.

## Anti-Hotspot Tape

Padded foam tape which is applied to the upper surface of each hoop prior to the polythene sheet being fitted. It acts as an insulator between the steel tube and the cover, preventing any heat build-up in the steel being transferred to the polythene. It also reduces friction between the hoops and the polythene. Anti-hotspot tape extends the life of the cover by 1-2 years.

## Polythene Cover

The standard polythene cover is white, allowing approx. 65-70% light transmission (30-35% shade value). This is considered to be the correct balance between allowing enough light to enter the building yet preventing excessive heat build-up on warmer, sunny days. A polyhouse environment provides much welcome light and warmth, which improves food conversation rates and creates a drier, healthier environment which is less favourable to many bacteria and viruses.

Alternatively, a cover which is green on the outside and white on the underside can be supplied where the structure needs to be less conspicuous. However, this allows no natural light to pass through. The white underside optimises artificial light inputs.

All of our polytunnel covers come with a 5 year manufacturer’s guarantee against UV degradation and manufacturing defects. However, a 10 year life is normally expected.

## PVC Cover

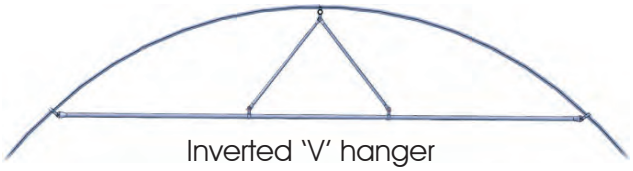
We also offer heavy-duty, PVC-coated fabric covers. Using 610g/m$^3$, flame retardant PVC fabric we can produce covers of any width and length. PVC fabrics offer extra mechanical strength and a life expectancy up to 20 years. Available in white, green, grey and translucent.

## Heavy-duty Fittings

All our brackets and fittings are purpose made in-house, and are zinc nickel alloy plated. It is important that all fittings & brackets can take the strains and loads imposed by wind and snow, hence, we do NOT use cheap, imported, far-eastern exhaust brackets & keyhole clamps.

## Bracing Bars

These are an optional extra and are only required for extreme weather conditions – heavy snow loads and extremely high winds. Not always required as they limit the height of machinery which can enter the polyhouse to approx. 2.5m high (depending on the width of the polyhouse). Manufactured from 50mm galvanised steel tube. Attached to each side of the hoops (above head height) and supported in the centre with inverted ‘V’ hangers, which creates a type of truss. Increases the wind and snow loading capacity by approx. 20%.



Inverted ‘V’ hanger

## Side Gutters (Optional)

All our sheep houses are available with optional side gutters. Manufactured from pre-galvanised steel sheet, and include a stop end, down spout, and support brackets. Usually fitted to both sides of the polytunnel, but can be installed on the windward side only to reduce the cost.

## Polytunnel Roof Fans

Fully automatic roof fans which can be operated on either a temperature or time basis. Very secure and simple to install, requiring no specialist tools. The pressure which is created when the fan is in operation lifts the cowl (lid), thus exhausting any unwanted humidity, viruses, heat, stale air etc. When the fan stops the cowl (lid) simply drops under its own weight to close the opening, preventing the ingress of water. The number of fans required depends on several factors, such as the type of animals housed, the number of animals, age/size, and the amount of natural ventilation which is already present. As a rough guide we recommend one fan approx. every 10m to 15m (33ft-48ft) along the centre of the roof. Mainly installed in Calf Houses
(see **page 15-16**). Please phone for further advice and prices.

## Heavy Duty Mesh Door Blinds

An economic alternative to roller screens. Available as full-height door blinds or 'above gate' door blinds. Manufactured from green, heavy-duty, monofilament netting with pull-cord operation. Allows good ventilation whilst protecting against severe weather conditions. Easily assembled and simple to operate. The width can be reduced during installation where narrower doorways are required. Other sizes available, please phone for details.

**Strong and durable | UV stabilised | Green Knitted monofilament (no fraying)**

| | ABOVE GATE BLIND | FULL HEIGHT DOOR BLIND | EXTRA HEIGHT DOOR BLIND |
|---|---|---|---|
| **SIZE (IMPERIAL)** | 12ft wide x 6ft 6 in high | 12ft wide x 9ft 10in high | 12ft wide x 13ft 1in high |
| **SIZE (METRIC)** | 3.7m wide x 2m high | 3.7m wide x 3m high | 3.7m wide x 4m high |
| **PRICE (EACH)** | | | |

# SINGLE-SPAN POLYHOUSES

| POLYTUNNEL WIDTH | 18ft (5.5m) | 21ft (6.4m) | 24ft (7.3m) | 27ft (8.25m) | 30ft (9.15m) |
|---|---|---|---|---|---|
| OVERALL HEIGHT | 9'9" (2.97m) | 10' (3.05m) | 10'6" (3.2m) | 10'9" (3.28m) | 12' (3.66m) |

## Single Span Polyhouses

Suitable for small, medium and large size flocks, or for upland/hill farms where flat ground close by the farm is in limited supply. Single span structures generally offer higher levels of ventilation, due to the ratio of vented sides to floor space.

The wider the polytunnel the lower the price per square meter, making the 9.15m (30ft) wide structure the most economical. If a central feed/access passage is being incorporated in to the layout design then the percentage of 'lost' housing space is vastly reduced with wider structures. For example, a 9.15m (30ft) wide polytunnel with a 3m (10ft) central passage only loses a third of it's livestock area, whereas a 6.4m (21ft) polytunnel with a 3m (10ft) passage would lose almost half.

# EXTRA HIGH POLYHOUSES

## Extra High Polyhouses

We now supply extra high polyhouses where extra height is required for access by large machinery. These can be either 0.5m or 1m higher than the standard polyhouses. Only recommended with 5ft (1.52m) hoop spacings, and are not recommended for exposed locations where severely high wind speeds are expected. Bracing bars are strongly recommended with these polyhouses. Our most popular widths are 27ft (8m) and 30ft (9.15m). Please phone our sales team for advice and a quotation.

Where these are used for housing calves/cattle we recommend solid clad sides up to 1.0 - 1.5m above ground level with a 0.5-1m heavy-duty windbreak mesh above this for overhead ventilation. Our steel side gutters are recommended on calf/cattle houses. **See page 15-16 for more details of our calf housing.**

# MULTI-SPAN POLYHOUSES

## Multi-Span Polyhouses

Multi-Span livestock houses provide the ideal solution to housing livestock in a medium and large-scale working environment.

Feeding and transport bays can be incorporated to allow safe, easy access and feeding.

The percentage of 'lost' space with feed/access passages is greatly reduced with the multi-span design.

Larger numbers of livestock under one roof makes lighter work of many duties, especially when you can't be in two places at the same time.

This type of larger, higher structure is becoming increasing popular for dairy herds and young beef cattle.

We can tailor the length and number of bays to suit your requirements.

| BAY WIDTH | 21ft 6" (6.5m) | 26ft 6" (8m) |
|---|---|---|
| OVERALL HEIGHT | 12' (3.66m) | 13' (3.96m) |

The most popular bay width is 26ft 6in (8m), with 3-bays wide being a popular option. We can reduce the width of the central bay to suit your machinery if you intend to use it solely for access and feeding, however, the cost of a narrower central bay doesn't reduce the overall price significantly. Having standard width bays allows extra room in the central bay for emergency housing, lambing pens and general storage if required.

Multi-span polyhouses are an economical option, door blinds and steel side gutters are optional extras. We would normally recommend that multi-span polyhouses are built by our contraacted constructors as they are more challenging than single-span polyhouses.

# FAQ's

## What size housing do I need?

It is recommended that each in-lamb ewe has a minimum of 0.9m$^2$-1.4m$^2$ of floor space (depending on breed). That there is a separate dedicated area for sick animals, and you have sufficient feeding/access space. See page 4 for more specific requirements. Calves require 2 - 5m$^2$ (see pages 15-16 for space requirement table).

## Do I require planning permission?

Strictly speaking.....yes. As with all our polytunnels we recommend that you contact your local planning authority for advice. Planning application (elevation) drawings are available on request. We normally charge a fee for these which we later deduct from the final invoice price of the polytunnel.

## How long will the polythene cover last?

All of our polytunnel covers come with a 5 year manufacturer's guarantee against UV degradation and manufacturing defects. However, 10 years plus is normally expected.

## Does it become too hot inside a polytunnel?

Strangely enough, polytunnels are widely used to house livestock in Australia and New Zealand, especially for cows.  Providing there is sufficient ventilation then a polytunnel creates an ideal environment. The white polythene cover also provides 30-35% shading.

If you have any further questions why not give our team a call 01282 873120

# CALF/CATTLE HOUSING

## Calf Housing

Polytunnel housing for calves and young stock provides a much welcome source of light and warmth, creating a dry, low-stress environment for your stock whilst keeping bacteria, fungi and odours to a minimum.

The width of individual pens for a calf from birth to 8 weeks of age must be at least equal to the height of the calf at the withers, as measured in the standing position. The length shall be at least equal to 'the body length of the calf, measured from the tip of the nose to the caudal edge of the pin bone' multiplied by 1.1. In practice this means pens at least 1.5 x 0.75m, but preferably 1.8 x 1.0m.

Calves must be group housed from 8 weeks of age, unless an animal is kept in isolation on the advice of the veterinary surgeon. See the table below for requirements.

## Dairy and Beef

Whether in cubicles or straw yards, polytunnels improve your animal's welfare. The benefits of natural light and warmth are many. Cattle are homeothermic animals and need to maintain a constant body temperature around 38°C. The lower critical temperature (LCT) is the temperature below which an animal must burn extra energy to keep warm (i.e. feed is channelled away from growth/production in order to keeping warm) hence the warmer winter temperature within a polyhouse will significantly reduce feed inputs. A lower requirement for

| Space Allowances For Group Housed Calves | | | |
|---|---|---|---|
| **Mass of Calf** | **Approx. Age** | **Minimum (statutory) Area** | **Recommended Area** |
| 45 kg | 0 months | 1.5 $m^2$/calf | 2.0 $m^2$/calf |
| 46-99 kg | 0-2 months | 1.5 $m^2$/calf | 3.0 $m^2$/calf |
| 100-149 kg | 3-5 months | 1.5 $m^2$/calf | 4.0 $m^2$/calf |
| 150-199 kg | 5-7 months | 2.0 $m^2$/calf | 5.0 $m^2$/calf |

artificial lighting reduces energy costs. Floor and bedding dry quicker, reducing bedding costs.

## Space Allowance For Feeding

Even if feed is available on an *ad lib* basis it has to be recognised that there are peak periods for feeding e.g. immediately after fresh feed is put down. To prevent subordinate animals giving way to dominant animals (often resulting in reduced growth rates), adequate feeding space must be allocated.

| Feed Face Required For Cattle Eating Simultaneously | | |
|---|---|---|
| Mass of Animal | Width of Feed Face | Bedding Area |
| <100 kg | 0.30 mtr | - |
| 100-199 kg | 0.35 mtr | - |
| 200 kg | 0.40 mtr | 2.0m² |
| 300 kg | 0.50 mtr | 2.75m² |
| 400 kg | 0.55 mtr | 3.50m² |
| 500 kg | 0.55 mtr | 4.25m² |
| 600 kg | 0.60 mtr | 5.0m² |
| 700 kg | 0.70 mtr | 5.75m² |
| 800 kg | 0.80 mtr | 6.50m² |

# GENERAL STORAGE & POULTRY HOUSING

## Poultry

Polytunnels which are used for poultry are normally clad with a black-out polythene. This is green on the outside and white on the underside. The green outer helps to blend in to the natural environment, whilst the white underside make the best use of artificial lighting. Widely used for both laying and table birds.

## General Agricultural Storage:

Machinery sheds, feed storage, crop storage, fertiliser & seed storage, dry work areas..... the list of uses is endless.

## Equine Field Shelter/Portable Livestock Shelter

Designed as an equine field shelter but has many other uses such as calf housing, portable livestock shelter, outdoor work shelter etc. Manufactured from 50mm pre-galvanised steel tube with a heavy-duty, flame retardant, PVC fabric cover. **Easy to erect in 1-2 hours.**

Supplied with 4 screw anchors for securing it to the ground – other fixing options available.

## A Range Shelter

Ballasted onto concrete blocks, the A-RANGE Shelter allows for a spacious storage space without the need for permanent foundations. Block walls can be laid in rows of any length to make a longer structure, or side by side to create multi-span bays.  Optional rear gable above wall panels and 'D' panels at the front can create an additional protection from the elements.

The A-Range Shelter is available in 10, 12 and 14m wide, and is designed to fit onto concrete blocks for lengths of any size in 2m increments.

## S Range

A modular storage structure, allowing you to create storage of any length in 2m increments.

The S-Range is available in 5.5m (18ft), 6.4m (21ft) and 7.9m (26ft) wide, and in any length in 2m increments starting at 4m long.

The weather-sealed S-Range comes with a Rear Gable & Front Door End by default, but can be supplied open fronted, with a single rear gable, by request.

## T-Range

The ideal work and storage building for industrial applications. Extra-high framework allows machinery and vehicle access, whilst allowing air flow and protection from the elements. Our T-Range is modular, allowing for buildings of any length in 2m increments. Easily modified, extended and relocated when necessary.

The T-Range is available in 10, 12 and 14m wide, and in any length in 2m increments starting at 4m long.


# Northern Polytunnels

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