

Corduff Handball Alley Renovation



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Walls

External Walls:

For new builds there are 2 options for insulating the external walls of the handball alley.

- Option 1 – Pumping insulation into the cavity (100mm cavity or 150mm cavity)
- Option 2 – Installing ridged insulation into cavity (60mm or 100mm cavity insulation)

It is important that the external walls are insulated to retain heat in the alley and reduce the chance of moisture on the internal walls.

Plastering Internal Walls:

The finish on the internal walls is a sand a cement finish. Allow for 25mm plaster finish on the inside walls when building the court to ensure the internal dimensions of the alley are 40'*20' when complete. Adding lime to the sand & cement when mixing helps absorb moisture in the walls and reduce the chance of condensation.



Flooring

Concrete Floor:

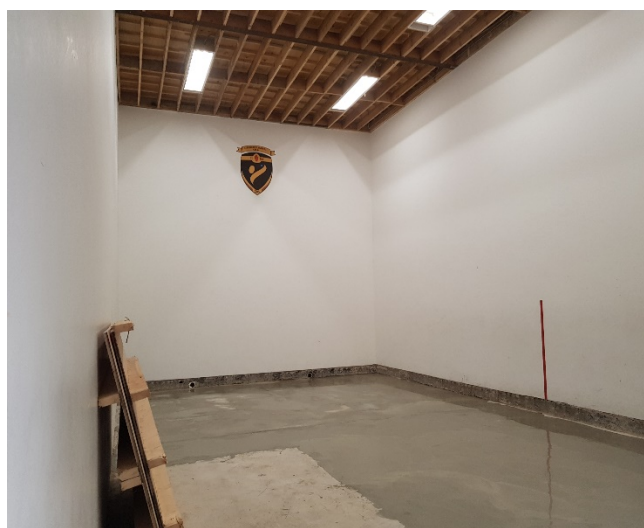
Allow for 150mm of insulation under the finished floor when building a new alley. If you are renovating your alley and there is little or no insulation in the floor, then you can install 25mm insulation between the battens as per picture below.



Fig 1.0 – Installation of 25mm Floor Insulation

It is very important to ensure the finished floor is level to make it easier to install the timber battens. Self-levelling compound was poured on the floor before the battens were installed. Once the self-levelling compound was set we painted concrete sealer on the floor to prevent any moisture rising up through the concrete.

Fig 2.0 – Pouring of Self Levelling Compound



Batten Installation:

3"*2" battens were installed at 250mm centres. We installed the battens this distance apart to ensure a consistent bounce of the ball on the floor and also to keep maximum speed of the ball. DPC was placed under each batten to stop it rotting over time. A 20mm gap was left between the battens at the overlap to allow air to easily flow under the floor. Each batten is also treated with timber preservative.



Fig 3.0 and 4.0 – 3"*2" Batten installation

Floor Ventilation:

Air flow under the floor is extremely important to prevent the timber rotting over time. Under the old raised floor there was 4 vents to bring in fresh air. The original floor was 9" off the ground and therefore the vents allowed the air to pass under the floor easily. We decided to install 25mm plastic conduit around the perimeter of the alley, the conduit has a 8mm hole drilled every 4". The conduit was then teed into the existing wall vents. The conduit allows air to flow around the alley and between the battens. When the ventilation system is installed this would increase the flow of air under the floor.



Fig 5.0 – Installation of 25mm Plastic Conduit



Fig 6.0 – Plastic conduit around perimeter of alley

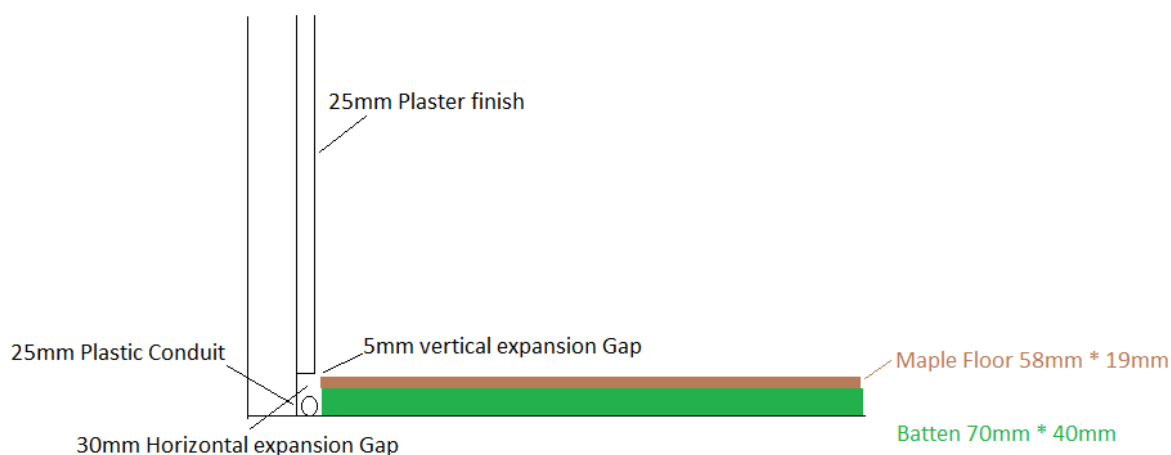


Fig 7.0 – Expansion gap required around alley

Timber Floor:

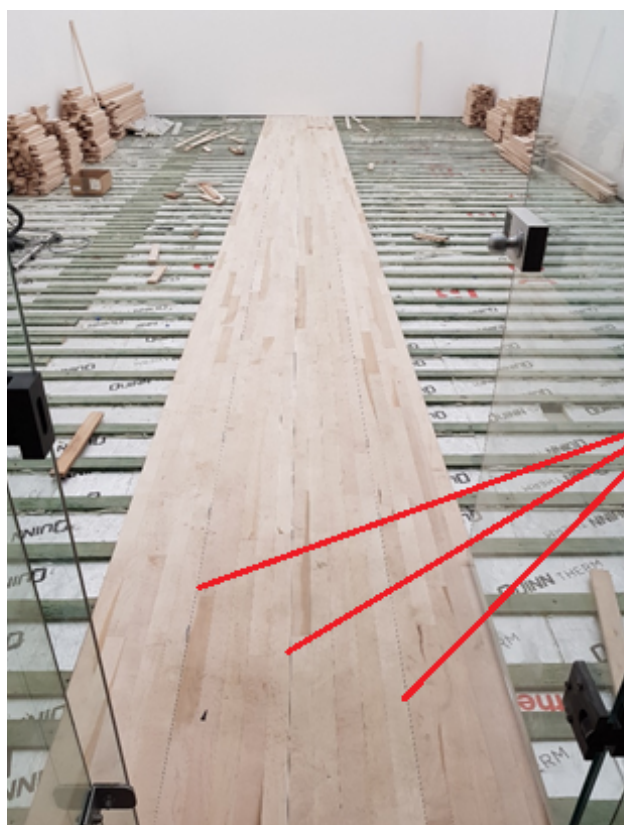
The timber floor installed is 2"1/4" * 19mm Canadian Maple Prime grade. The floor was purchased from Murdock timber supplies in Newry Co. Down. The cost of the floor was €50 per sq mtr. We ordered 85 sq mtr, this is approx. 7 sq mtr more than required but we allowed for 10% waste. The cost of the floor was a lot cheaper than other prices received due to it being an end of line product. Prices can go up to €120 a sq mtr due to limited stocks available in Ireland.

Before installing the floor, we took the timber out of the cardboard boxes and spread out in the alley as per picture below. We stacked the timber on top of each other allowing the air to flow between each piece. The floor was left in the alley for 3 weeks before it was installed. This is to allow the wood to settle in the new environment and moisture levels in the floor to level out. Some boards may twist or warp during this time which should be thrown away.



Fig 8.0 – Ventilation of Maple Timber

To lay the floor you should start from the centre of the alley and work out in each direction. The first board we laid we decided to cut the tongue from the board and nail it down. The reason for this is that if the floor moved more than the expansion gaps allowed for and hit the side walls then we could easily remove this centre board and replace with a smaller board and allow the floor to continue to move.



Expansion Gaps

Fig 9.0 – Installation of washers to allow for expansion

Washers were placed between every 6th board to allow for expansion. Ensure no water spilled on the floor at this stage as it will cause the floor to warp and twist. This is extremely important as Maple will get damaged very easily. Mix up the different lengths of boards when installing the floor. Lengths can vary between 400mm up to 2000mm. Ensure never to have 2 joints beside each other between the 3*2 battens as this will lead to floor to squeak when walked on.

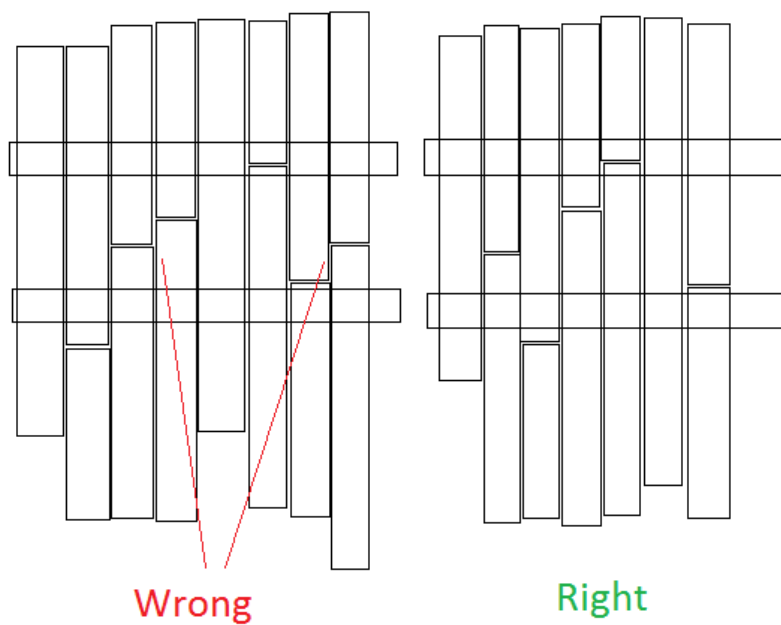


Fig 10.0 – Right and Wrong way to install Maple floor.



Fig 11.0 Installation of Maple Floor



Fig 12.0 Finished floor

Painting

Wall Paint:

The Court Walls and Ceiling should be painted white with good quality Vinyl Matt (Berger, Dulux or Equivalent) emulsion paint. The above recommendations will eliminate most of the condensation problems that exist in Irish Courts but you should also look to install a heating system in the Court to achieve absolute atmospheric control.

Floor Paint

The timber floor is firstly sanded to ensure the surface is smooth and clear of any blemishes. GP Base coat from Gran Wax is then applied. The floor is lightly sanded again before applying a coat of Master Finish sport from Gran Wax. Floor is sanded again before applying Red games lines paint as per dimensions highlighted in Fig 13.0.

Two more coats of Master finish sport are applied to finish off the floor. You do not have to sand in between both of these coats. A second coat can be applied 1.5 hours after the first coat.

Ensure to use Micro Fibre Rollers so as not to cause streaks. Let the floor dry for a couple of days before walking on.

Master Finish Sport – 5ltr drum will paint 70 Sqmtr

- GP Base coat
- Master Finish Sport
- Hardener
- Red Games Line paint

Total Cost - £391

Gran Wax contact – Nick – 0044-7973119828



A. Dimensions.

1) **International 40x20 Court:** The dimensions are:

Front Wall 20ft wide, 20ft high.

Floor 20ft wide and 40ft long with back wall recommended minimum height of 12ft.

Back Wall A full glass back wall is recommended for spectator purposes.

(Diagram 1: 40x20 Court Dimensions)

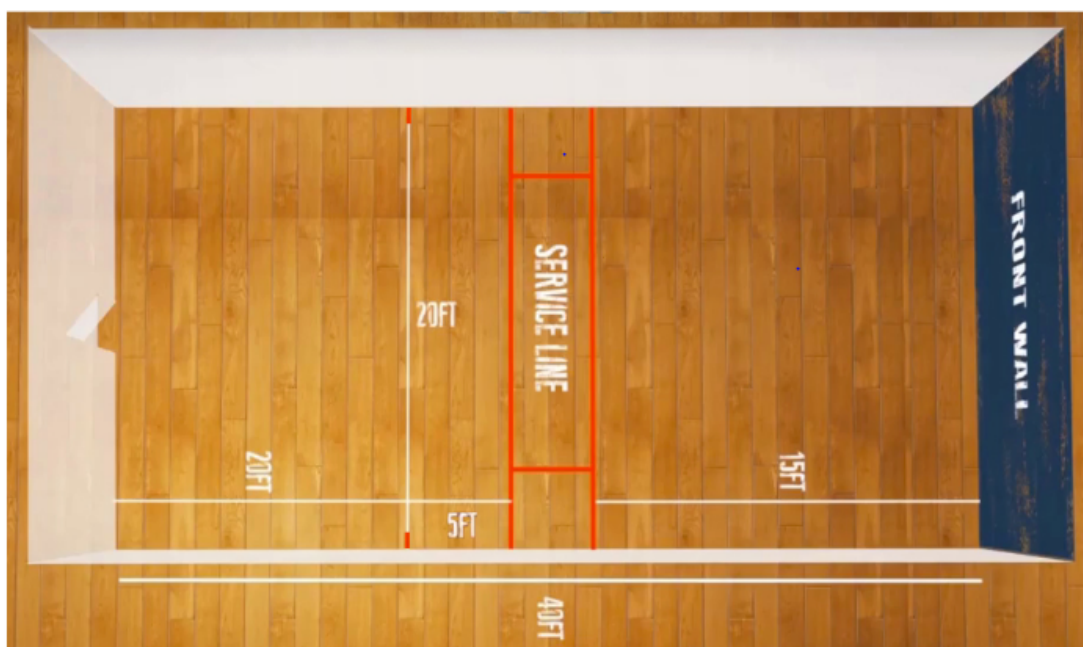


Fig 13.0 Court Dimensions

Handball courts shall be divided and marked on the floors with 2-inch wide lines. Recommended colours are white or red. The lines shall be marked as follows:

- 1) **Short line.** The short line is parallel to the front and back walls. Its outside edge is 20 feet from the front wall in the 40x20 court, and 32.5 feet from the front wall in the 60x30 court.
- 2) **Service line.** The service line is parallel to the short line and its outside edge is 5 feet in front of the outside edge of the short line.
- 3) **Service zone.** The service zone is the area between the outer edges of the short and service lines.
- 4) **Service boxes.** A service box is located at each end of the service zone by lines which have outside measurements of 18 inches from, and parallel to, each side wall.
- 5) **Receiver's restraining lines.** Five feet back of the outside edge of the short line, lines should be marked on the floor extending at least 6 inches from the side wall. These lines, parallel to the short line, may also be marked as a broken line extending from side wall to side wall. (See Rule 4. 4.A).



Fig 14.0 – Serving lines painted on floor

Ceiling:

We dropped our floor and ceiling down 7" when renovating the alley. To install the new ceiling we installed 6"*2" joists across the width of the alley. The joists are installed at 12" centres, this is to keep the speed in game playing when hitting roof shots. The joists are bolted to each sidewall and also braced to the old joists above to ensure no movement.



Fig 15.0 – Installation for Ceiling Joists

Lighting:

We wanted to install LED lighting to reduce the running cost and also to increase the life span of the blub. We installed 4 rows of 3 single 70w LED'S lights. The layout of the lights are highlighted in Fig 18.0 below. The lux levels we wanted to achieve were lux 550lm

- **Make:** Prelux
- **Type:** Lineout 70w Standard LED 6ft Batten (4000K)
- **Dimensions:** 1728mm*62mm*72mm
- **Beam Angle:** 120 deg
- **Cost per Light Fitting:** €65.00

To install the lights, we made up light boxes to house them. The light box dimensions are shown below in Fig 17.0. Air holes are left in the box to allow for any heat to dissipate. The light boxes are installed 6mm below the level of the 6*2 joists. The Plywood sheets are cut out to fit around the light box.

The plywood used is 12mm Beech plywood as it has a better quality finish. The light boxes end up 6mm above the bottom of the ceiling this is to allow for the clear polycarbonate light covers to be installed. Polycarbonate was installed as it is stronger than Perspex and does not mark when a ball hits it.



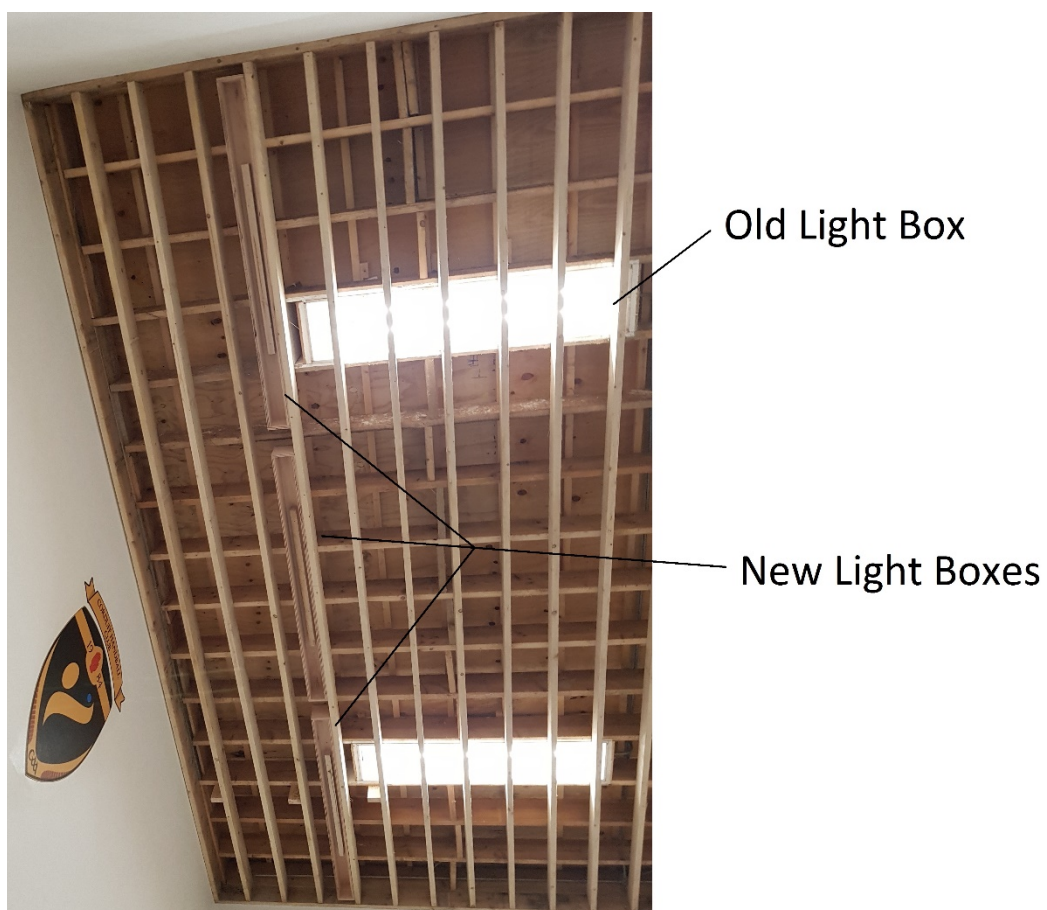


Fig 16.0 – Installation of Light boxes

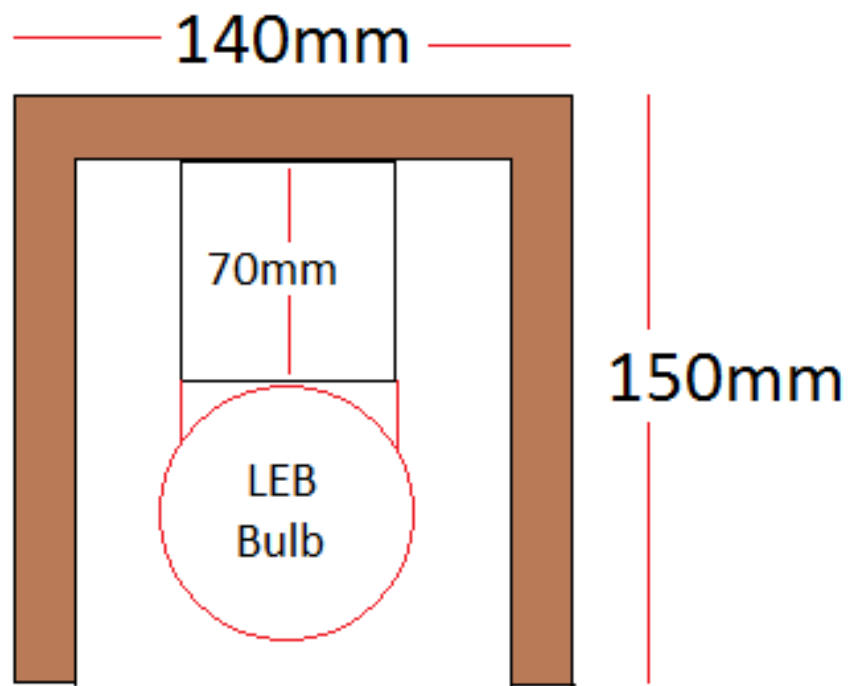


Fig 17.0 – Dimensions of Light box

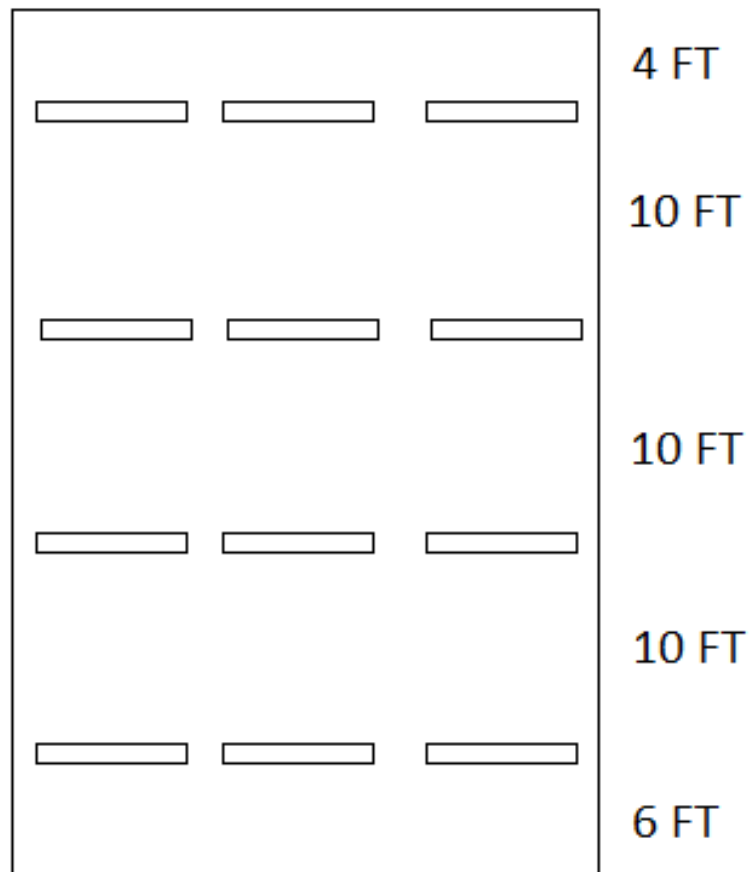


Fig 18.0 – Layout of LED Lighting

Ducting:



Fig 19.0 – Installation of Spiral Ducting

A Handball Court would require Four Air Changes per Hour for proper Humidity control. It is recommended that a 12" Extractor Fan with a 3 Speed Controller be fitted at the rear of the Court, either on the side wall or ceiling. We installed 2 6" ducts, one duct is to bring fresh air into the alley and the other is to take moist air out of the alley. 2 External fans can be controlled manually from an accessible position and automatically through a humidistat. The preference here would be to install a Hand/Auto Switch to allow manual operation at high speed when a crowd is present, and be left on automatic control at low speed through a Humidistat at all other times. This will change the air constantly and extract the moisture away from the court.

Plywood Ceiling:



Fig 20.0 Installing Beech Plywood Ceiling

Plywood sheets are screwed to joists to secure. All Joints and the screw holes are filled with filler before ceiling receives second coat of paint. Polycarbonate clear sheets are screwed to the bottom of each light box to protect lights during game play.

Microphone and Speakers:



Fig 21.0 – Speaker installation

Due to the build of the alley there was no opening above the back wall glass to allow sound to travel between viewing area and alley. This made it very difficult to referee games. We installed speakers and microphones in the alley and viewing area in order for a referee to communicate with the players instead of having to open a close the door into the alley each time they call the score.



Fig 21.0 – Position of Speakers and Microphone

Glass Wall:

To ensure the glass wall is installed securely we had to chase a vertical trench from each sidewall in order to fit the U Channel for the glass to securely fit. This is shown in **Fig 22.0** below. Also to prevent the glass moving when hit we designed the back wall to be bolted to a steel beam running across the alley.

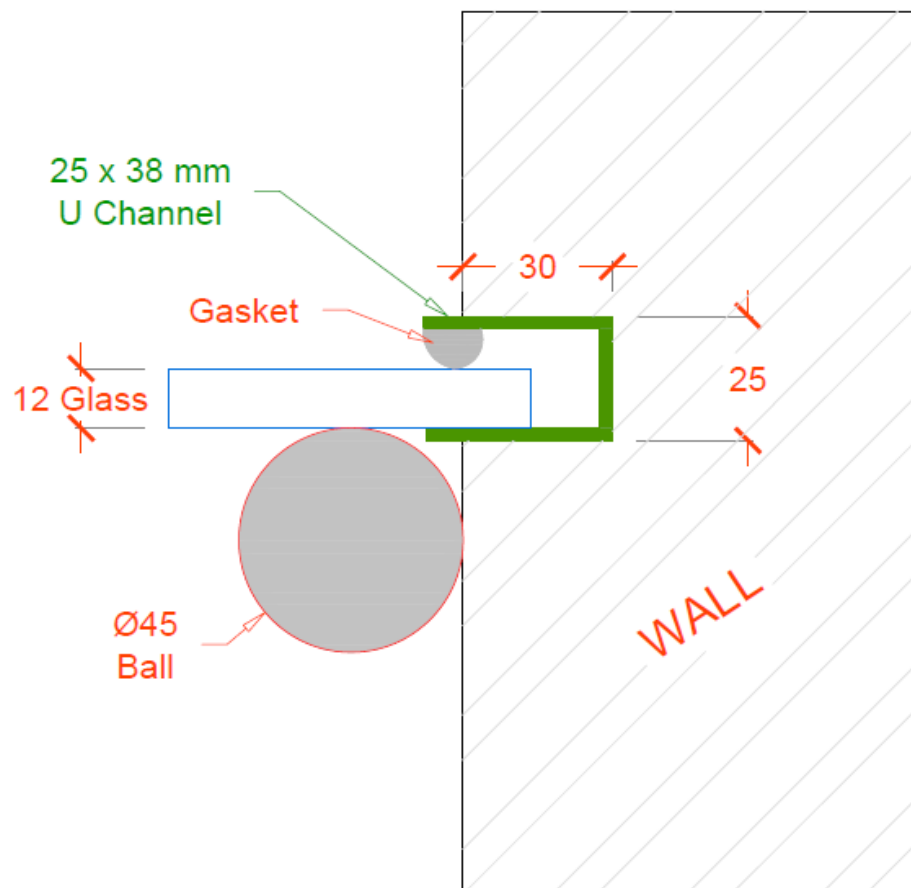


Fig 22.0 – Dimensions of trench to be cut out

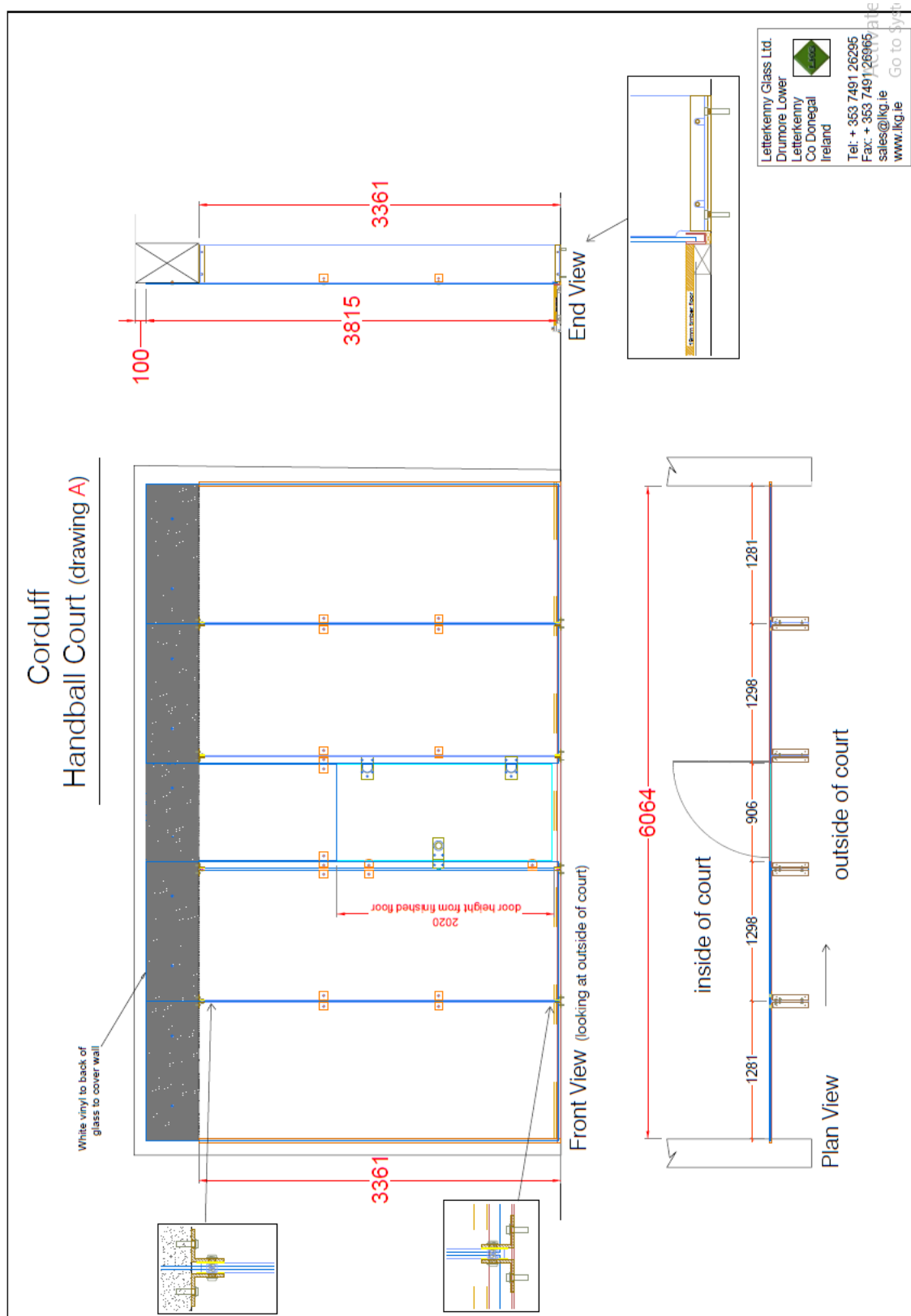


Fig 23.0 – Drawing & Dimensions of Glass wall



Fig 24.0 – Glass wall Installed

Supplier – Donegal Glass

Contact – Mark

Number - 074-9116800