



SQUASH EVENT INNOVATION TIMELINE

..... *Spectator event presentation, broadcast & Courts*

Until squash courts had glass back walls, viewing was very limited, as was the opportunity to televise or even photograph on-court action. But from the first use of glass nearly 50 years ago the breakthroughs in court construction, colour, presentation and broadcast have been rapid and varied. Here are a number of the key innovation milestones that have seen squash move even further into the mainstream as a spectator sport.

1954 & 1956

To add to backwall balcony viewing, small windows are added just above the backwall out-of-court line in courts in Invercargill & Palmerston North respectively, in New Zealand. This adds two lower rows of spectators to the balcony capacity.



1958

A university in Cairo, Egypt shows that even when limited to over the back wall viewing, larger numbers are possible as they build tiered seating for around 500 spectators.



1959 & 1962

Squash is televised in a local broadcast for the US Open in Pittsburgh in 1959; and three years later part of a court door is removed in Perth Australia to enable filming through the open doorway.

1965

A glass window is placed in a court door at the Albert Park Squash Centre in Melbourne to enable filming, and is used for the ISRF Men's World Individual Championship in 1967. (*Geoff Hunt, front, beating Cam Nancarrow, rear, in the final*).



DECEMBER 1966

The World's first squash court with a glass backwall is unveiled at Birkenhead Squash Rackets Club in Merseyside, UK. The breakthrough is a tribute to its developers Pilkington Glass. It consists of a panel of glass, 5ft/152cm high by 16ft/488cm long let into the backwall; the glass being 1inch/2.5cm thick and glazed along its four edges. (*However, as the wall opens onto a passageway viewing is negligible*).

1968 & 1969

An entirely transparent backwall is built in a new court at the University of Pennsylvania, USA; and the same is done in Brisbane, Australia. Unfortunately the six vertical steel mullions and head sections running the full width of the court make spectating and filming difficult.

OCTOBER 1971

Back in England at the Abbeydale Park Sports Club in Sheffield the first all-glass backwall is installed using base supported toughened glass (i.e. with fins) as has become the norm ever since.

It features six panels and four fins. The initial reflection problem that created an issue for players

in playing against the wall was resolved by etching vertical lines into the wall.



JAN 1972

The British Open becomes the first major championship to utilise a glass backwall when played at Abbeydale, Sheffield. As the event programme notes: 'For the first time spectators can easily see what is happening in the back corners of the court, where so much play takes place'.

(Greater attendance seems to equate to a five-fold increase in prize money with the winner taking GB£500, up from GB£100 the previous year).

FEBRUARY 1974

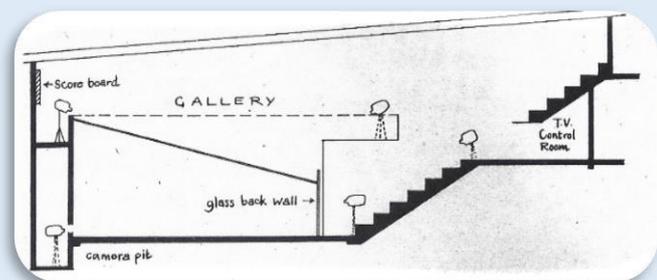
Television agrees to cover the final of the British Open at Abbeydale making use of the opportunities presented by the glass backwall.

(However, viewers to BBC TV Grandstand programme have no final to watch as Pakistani Mohamed Yasin is forced to scratch due to a tendon injury. A hastily arranged exhibition match is played between the other finalist Geoff Hunt and Jonah Barrington, loser to Yasin in the quarter finals).

NOVEMBER 1974

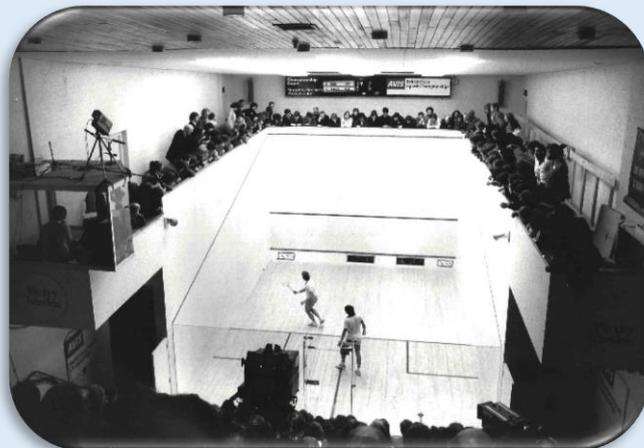
The next refinement for spectator squash is unveiled at Wembley Squash Centre in London where the needs of broadcast are built into the design. It is a glass backwall court with seating for 240, plus standing for 80-100 more.

Some seats are removable to allow TV cameras to be placed centrally as they are on the flanks at the front too. In addition, ducts are built into the walls



to carry TV cabling, and a commentary booth is included too.

Glass panels are also included in the tin 'a camera pit', so that action photos can be taken from the front view, adding a facial and close up dimension to photography.



APRIL 1977

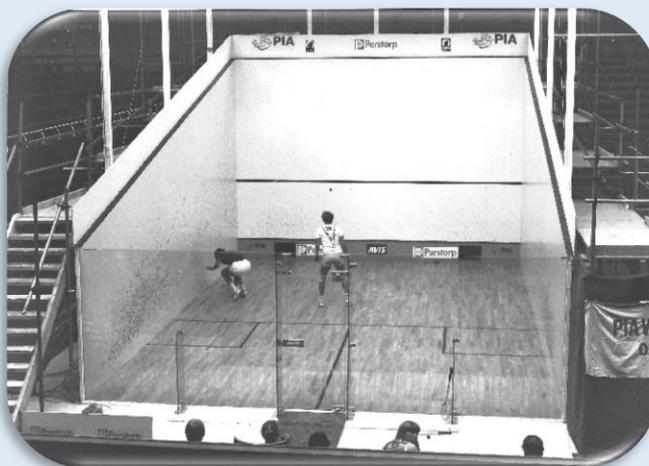
English company Campbell Reith & Hill patent a system of retractable seating that convert a squash court into a viewing gallery. It is first used at the Lookers Masters professional event in Manchester, England.



SEPTEMBER 1978

In Stockholm, Sweden, a pre-fabricated court with a glass backwall supplied by the Swedish Perstorp company is erected in two days at the Kungliga Tennishallen, the home of Swedish tennis.

This allows 600 people to watch the later rounds of the Swedish leg of the PIA Series pro-circuit ranged along the banked seating beyond the glass



backwall. It is the first instance of a demountable court being built to add to spectator capacity.

1979

German court company ASB introduces courts with movable side walls so that they can be pushed across an adjoining court and enable side-wall spectator seating to be used on the adjoining court.

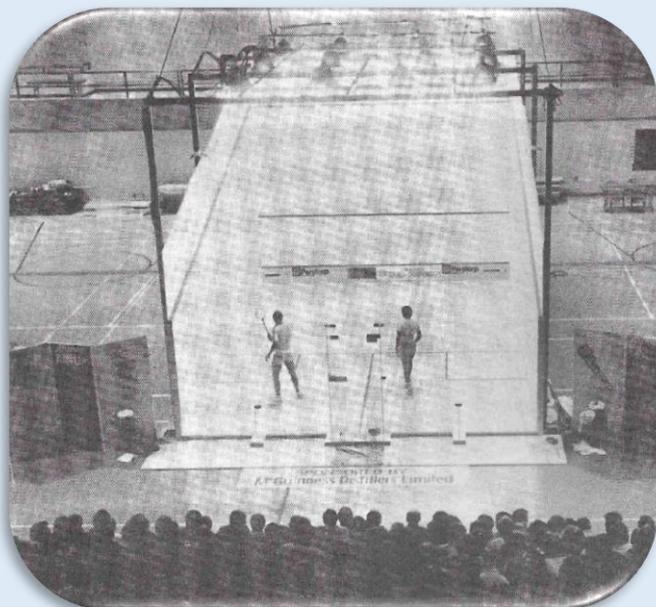


An alternative also introduced by ASB is a rotary wall that can swing back and provide seating in a court opposite the match court. Other court companies e.g. Courtwall, enter this market so that availability is widespread.



SEPTEMBER 1979

A world title is played on a portable glass backwall court for the first time when the Men's World Open takes place at the Etobicoke Olympium Sports Centre in the Etobicoke suburb of Toronto,

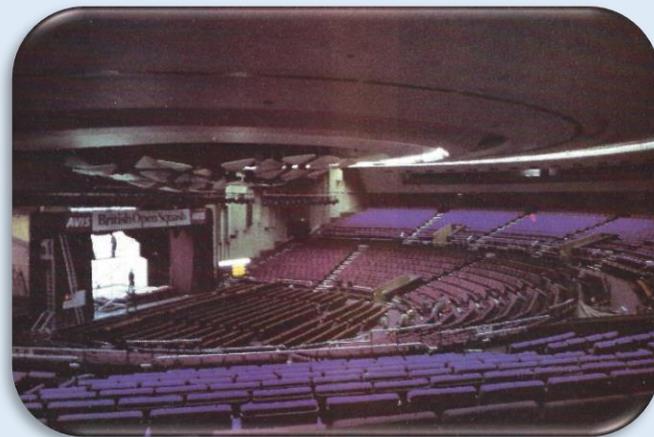


Canada. The other court walls are made from textured laminate bonded onto panels.

All 44 of the integral Perstorp court parts arrived safely, and the court built in less than three days.

MARCH 1980

The British Open uses the Perstorp court at the Wembley Conference Centre, London, enabling around 1,200 spectators to watch in a fan of seats beyond the on-stage court.



JULY 1981

While backwall glass is clear, treated glass for other walls moves forward when the world's first transparent squash court side wall is installed. This gives a place in squash history to the village of Walton in Yorkshire, England where Walton Hall entertainment and sports club is located.

A side wall of a court is removed and is replaced with a Twin-View glass one. Twin-View, an American company, have developed a system of using tiny black and white ceramic ink dots superimposed on each other on the surface of the glass before the glass is toughened. This then fuses the dots and provides a textured surface that prevents skidding.

OCTOBER 1981

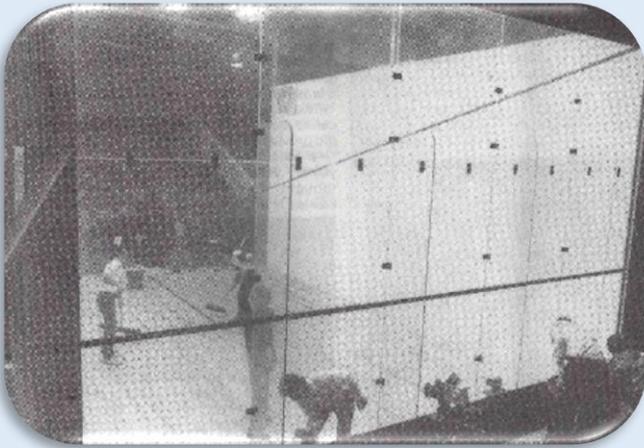
An all glass court is still awaited but an alternative appears. It is a plexi glass court which is properly titled Trans-Wall, but often termed the 'plastic court'. Another Swedish company, Andren & Sons of Stockholm use the same dot principle but avoids patent issues by not using glass. All four sides are treated.

The debut championship is the German Masters played in an air hall in Cologne with viewing on three sides.

NOVEMBER 1981

Glass takes another step forward. This time the first glass front wall. For the World Open, this time held in the Columbus Community Center in Toronto, Canada, a treated front wall is used in

conjunction with a plain glass backwall and two demountable Fiberesin panel side walls.



AUGUST 1982

Another step in the all glass story. Twin-Vue unveil a court with one solid side wall but glass for the other three walls in an Audi warehouse in Milton Keynes, England.

OCTOBER 1982

The third breed of multi-sided transparent court makes its debut at the World Masters at the Granby Halls in Leicester, England for the ICI World Masters (an event for professionals, not seniors) – and for the first time spectators have viewing on all four sides.



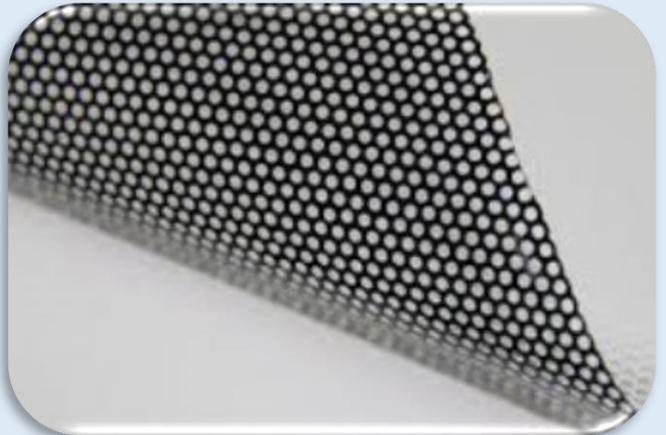
The walls are fabricated from Perspex and is called the Safe-Screen court.

This unveiling follows earlier steps. The first was a Campbell, Reith & Hill (CRH) designed model of an all-glass court being shown on UK's BBC Programme Tomorrow's World in June 1977. Then

in December 1978 a CRH design glass court was play-tested at TV studios in Southampton.

Finally, in August 1982 the court used for the World Masters six weeks later is built to test the precision of the exact 'registration' of the white and black dot layers to produce clear viewing from the outside but a 'milky' finish for the players to sight the ball against.

It is Contra Vision, a clear film of superimposed black and white dots that is 'wallpapered' onto the inside of the court wall.



This development which has led to a huge range of business / commercial use, does suffer from edges lifting and achieves its fuller potential when the dots are baked in and colour options are added later in the decade.

NOVEMBER 1982

The three clear wall Twin-Vue court seen in August is used for the first time at the Audi World Open held at the National Exhibition Centre near Birmingham, England.



1983

After a few years when the white clothing rule was relaxed to allow 'light pastel' (as illustrated), in

1983 the World Squash Federation dropped colour restrictions entirely, making the sport more 'colourful' for spectators and broadcast viewers.



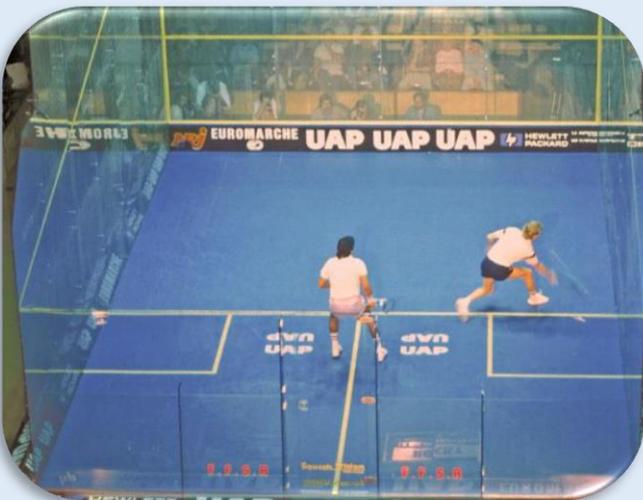
MARCH 1983

The floor changes colour, as does the ball. The French Open paints the showcourt floor blue and balls are now white instead of black.



The first blue floor glass court French Open match is played at the Cirque d'Hiver in Paris by Frank Donnelly (Australia) and Ali Aziz (Egypt).

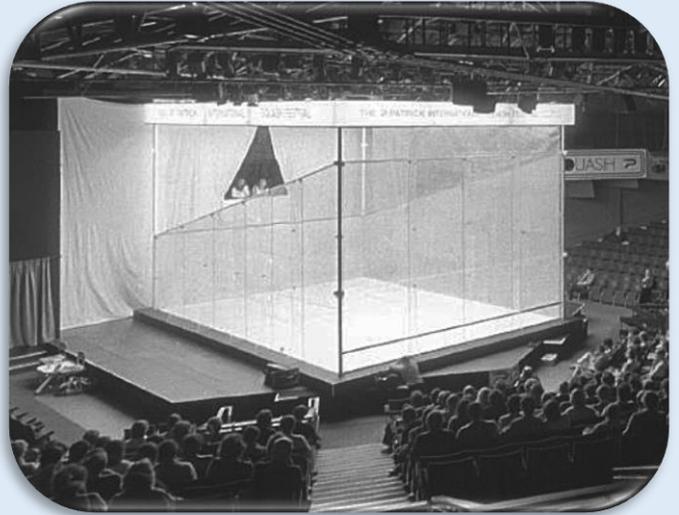
Some court markings are now yellow and overall a more colourful presentation is achieved for television. Spectator viewing is enhanced too.



MARCH 1983

Also in this month the Patrick International Festival event tries a probably unique situation of the master camera filming being through the front wall is tried. There was no backwall viewing for the event.

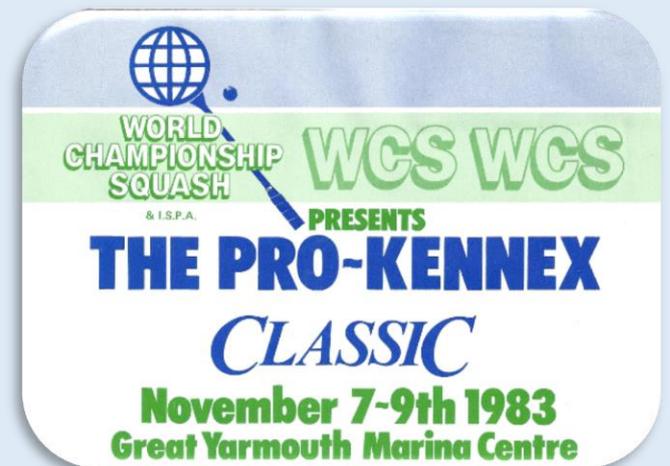
It was in the Men's final that Jahangir Khan beat Gamal Awad in the then record-breaking 2 hours 46 minute match – of only four games!



NOVEMBER 1983

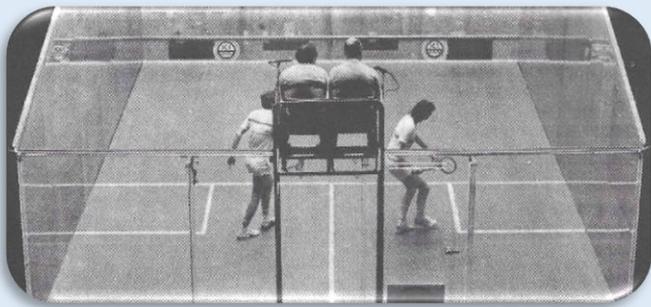
Point-A-Rally scoring is trialled at a three day event in Gt Yarmouth, England – the Pro Kennex Challenge. It used a best of 3 games to 11 points for the early rounds (and a 3 point sudden death at 10 all) designed for shorter, high incident matches.

Semis and final were best of 5 games.



OCTOBER 1984

At the World Masters (pro) event in Warrington, England the referees are moved to be perch on a gantry erected against the backwall. The 'Squash Observer' is a perfect position for officiating, but not good when TV cameras are present as their back view obstructs the court!



APRIL 1985

An experimental luminous ball had been tried in 1984, but it is at the 1985 British Open that the next TV breakthrough occurs. Dunlop balls have been drilled with holes by dentists in Surrey, England; looking similar to a golf ball, into which light reflecting material is placed.



Lights placed next to camera lens shine on the ball the beam returns to the lens to produce a glowing highly visible ball, called a Tele-Ball. It works on the same principle as a headlight beam reflecting cats-eyes on roads.

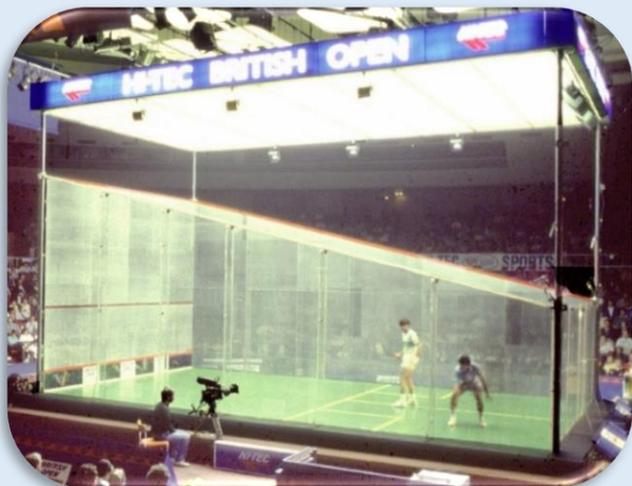
Following the play becomes easier - except for people viewing through the front wall who are dazzled by the bright light!

OCTOBER 1986

A Merco version of the Tele-Ball using 'fingers' of reflecting material is used at the Men's World Open in Toulouse, France (*top ball, above*). But the increased proportion of reflective area to rubber makes it more prone to skidding. Tele-balls were discontinued as camera picture quality improves.

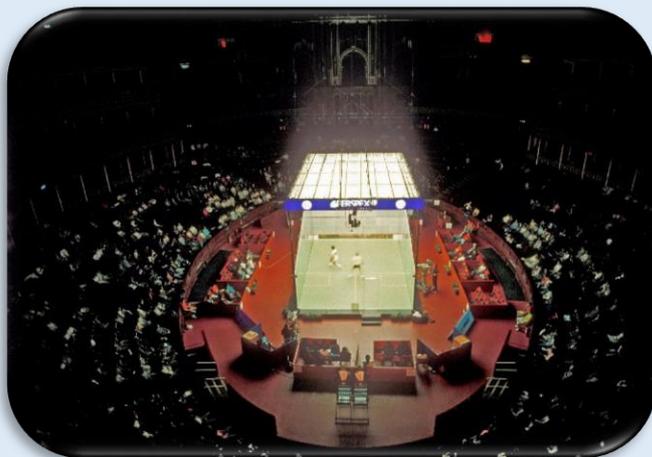
APRIL 1987

The British Open Championship at the Wembley Conference Centre sees the court floor moving from blue to green to try and improve visibility – it being considered that green is a 'warmer' colour and easier on the eye.



OCTOBER 1987

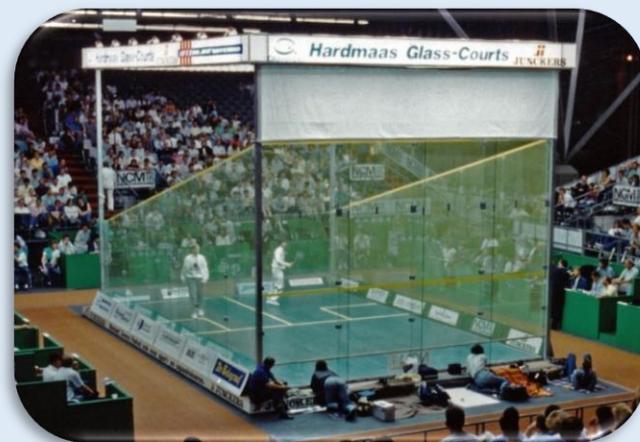
The Men's World Team Championship matches staged at the Royal Albert Hall in London increase the record crowd for the final to 3,526.



MAY 1988

Perspex is lighter than glass but scratching affects visibility so, although glass is more prone to breakage, all-glass courts are introduced, with the Men's World Championship in Amsterdam, Netherlands using one for the first time – made by Hardmass Glaverbel.

The Contra Vision film used is light green, bringing colour to the transparent walls.



1989

Experiments are done to take forward the principle of the Tele-Ball, but without the shortcomings of it (a) only working through the rear wall and (b) reflections. Computer technology and control of colour of clothing, rackets, court markings cuts out the colour of the ball and leaves a glowing 'chroma' ball on-screen. This is not adopted.

1989

Men's professional squash moves from 'Hand in/hand out' to Point-A-Rally scoring to 15 points per game to try and shorten average match length.

1990

Men's professional squash moves down from 19" (48cm) tin height to 17" (43cm) to encourage more attacking play, while shortening match lengths too.

MARCH 1994

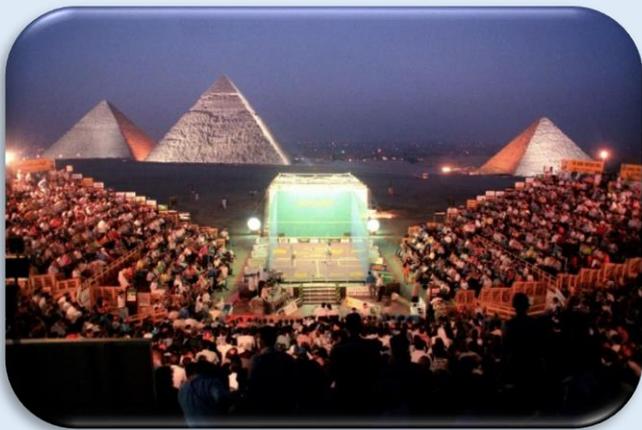
The Grasshoppers Men's professional event in Switzerland uses tennis scoring to test it as a squash option. While it increases the proportion of critical points overall it is decided that overall it is not worth pursuing further.

JANUARY 1995 & MAY 1996

The Tournament of Champions event is played at Grand Central Terminal in New York for the first time in 1995.



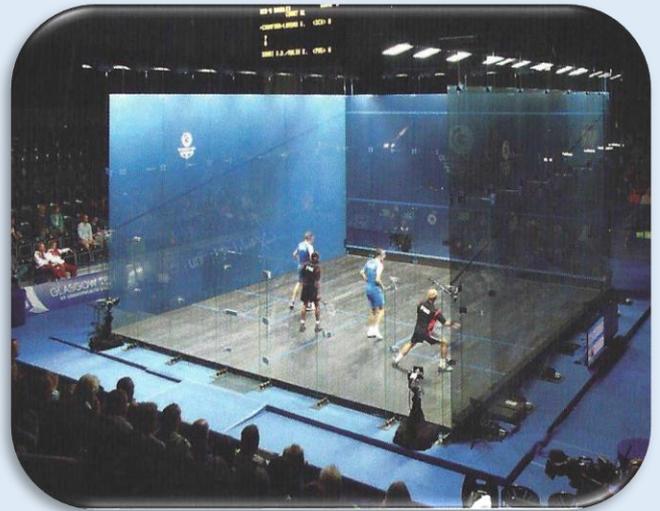
The Al Ahram Championship is played in Cairo in the shadow of the Pyramids a year later. These stunning stagings provide a major stimulus for other promoters to consider iconic locations both inside and outside.



SEPTEMBER 1998

The first glass showcourt that could be expanded onsite to a doubles configuration is developed by ASB for squash's inaugural participation in the Commonwealth Games in Malaysia. Both side walls can be moved outwards by 1.1m to reach the 7.62m doubles width.

(Subsequently the doubles competition court width of 7.62m that was decided upon in 1991 expands to 8.42m from 2012 onwards).



NOVEMBER 1998

The Women's World Open in Stuttgart, Germany is the first time that ceiling downward lighting is not used - lights shine up into mirrors over the court as a trial alternative instead.



2000

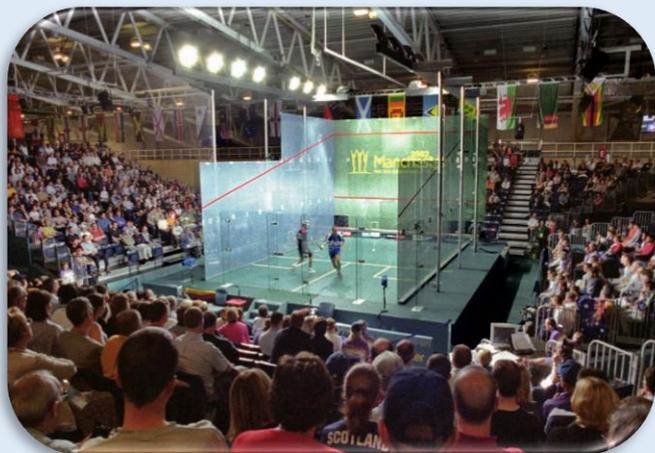
ASB courts introduce a sensitive strip 5cm wide which runs across the top of the tin and registers when a ball hits it, indicated by a sound and flashing light. Because the show courts are built in panels which it crosses, and at this time different tin heights are used for men's / women's matches the accuracy is not felt to be 100% effective.



JULY 2002

For the Commonwealth Games in Manchester, England, a permanent all-glass court built on an

elevated base with hydraulics is unveiled, so that the court can be moved for the event from the squash facility into the adjacent indoor athletics track through a removable wall, and seating built around it.



FEBRUARY 2004

The first live internet streaming comes from the Tournament of Champions in New York, USA.

2005

Men's professional squash switches from 15 points per game to 11 points to shorten matches.

APRIL 2005

Virtual Spectator (VS) is introduced at the Bermuda PSA Masters. It uses interactive technology to combine real-time scoring, player statistics, updated draws and commentary via a download.

JULY 2006

A floor made of glass panels with LED lighting under it, developed by ASB, is used for the Qatar Airways Women's Championship in Hyderabad, India. The court is built outside the Falaknuma Palace, becoming the first 5-glass surface court.



The ASB Company have been at the forefront of court developments, and founder Horst Babinsky is seen here on his company floor in Hyderabad.

The floor is 'hard' but with good playing characteristics. However, when used the following year at the Men's World Open on Bermuda, the intense humidity in the tent makes it dangerously slippery.

The floor is more successful at the air-conditioned Express Avenue Mall for the Men's World Team Championship in Chennai, India a week later.



2009

Women's professional squash moves from 'Hand in, hand out' to Point-A-Rally scoring up to 11 points per game, aligning with the Men's Tour.

JANUARY 2010

PSA launch SquashTV, a live and video-on-demand platform at the Tournament of Champions in New York, USA. SquashTV films and produces the programming eliminating the varying standards of local host broadcasters at events and so ensuring continuity and quality.

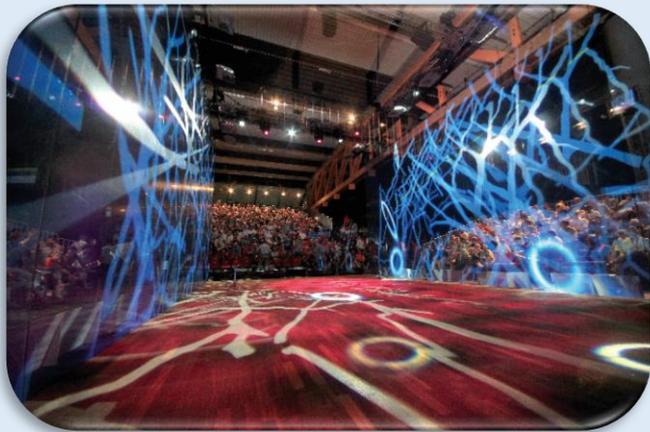
The initiative provides a complete production service that is flown in to the event to film, edit, produce and distribute onsite.

JANUARY 2011

HD filming and 'Extreme Super SloMo' comes on stream for SquashTV production at the World Series Finals at Queens Club, London, England.

AUGUST 2011

The potential of using lighting and colour to enhance the spectator enjoyment at events is demonstrated by the Light Power Company at the Men's World Team Championship in Paderborn, Germany (*below*).



The following year, innovative use of court colour integrated with lighting and setting is seen at the PSA World Series Finals in London.



SEPTEMBER 2011

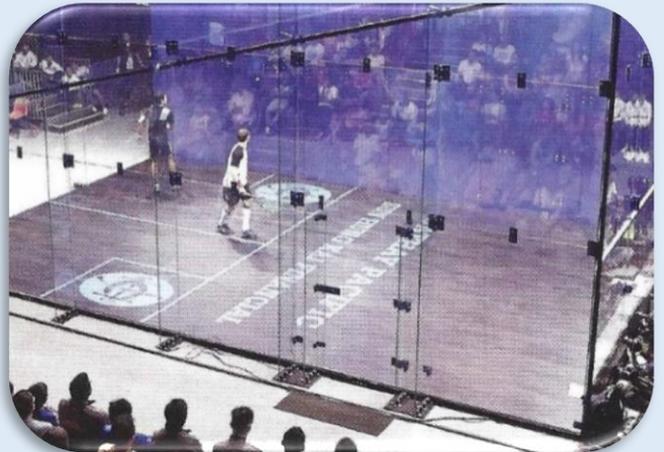
Following successful trials at the Canary Wharf Classic, video review of referee decisions is introduced at the British Grand Prix event. This adds another element to the squash entertainment package as the video referee reviews the referee decision on appeal, with replays of the situation being shown on the venue spectator screens.



APRIL 2012

Another new innovation is introduced by ASB, who place a door on each side wall rather than on the backwall, first seen at the El Gouna event in Egypt. This allows for larger panels in the backwall, no

door frame and fittings, and so enables a 'cleaner' broadcast shot through the backwall.



NOVEMBER 2012

Three showcourts are used for an event for the first time at the Women's World Team Championship at the Parnasse Center in Nimes, France.

This was followed up at the Men's World Team Championship the following year also in France (Mulhouse), pictured.



2013

LED out-of-court lines are introduced by court company ASB, illuminating the lines for spectator and broadcast enhancement.

Used instead of tape, and with a wireless remote control, lines can be in any colour, e.g. pink pictured, to reflect the colour of the walls and general branding.



LED court lighting also appears at the Men's World Championship in Manchester, England.

AUGUST 2013

SquashTV Lite is introduced by PSA. It is a scaled down production option for events, and with reduced costs, so, broadening still further the range of events that can be effectively streamed.

It started with two cameras, and over the next few years expanded to six cameras, commentary, slo-mo replays and video review functions. In January 2017 a second kit is added.

2014

PSA's TriRef System comes on stream – a wireless electronic refereeing programme that allows all three match referees to make independent judgements about match incidents, without the knowledge of their fellow match officials, to determine the outcome of decisions.

This system was phased out in favour of a single referee + video referee review system, called SquashRef. It also enables live scores to be uploaded more widely i.e. for all events using the SquashRef app.



MAY 2014

The British Open sees the start of a change in rules interpretation for professional squash, encouraging players to make every effort to play the ball. Reducing the number of lets, and so increasing continuity of play, is intended to improve the spectator and broadcast viewer experience.

MARCH 2015

Tennis Channel becomes the North American broadcast partner of the PSA on the network and its digital subscription service, Tennis Channel Plus.

SEPTEMBER 2015

Squash becomes the first racquet sport to be broadcast live in UltraHD in the UK at the 2015 AJ

Bell British Squash Grand Prix in Manchester, England, when the semi-finals and final are shown live on BT Sport in HD and UltraHD.

DECEMBER 2015

Eurosport begins broadcast for SQUASHTV Tour output in Europe, through their online on-demand channel Eurosport Player.



JANUARY 2016

After trials, Women's professional squash now moves down from 19" (48cm) tin height to 17" (43cm), the same height as for the Men's professional squash.

JANUARY 2018

PSA starts 'MoTrack' statistical tracking system at the 2018 Swedish Open in association with court manufacturer ASB. It captures on-court player data e.g. distance covered and heart rate; a new viewer benefit in partnership with Sports Data Labs.



MARCH 2018

The Canary Wharf Classic is the first ranking PSA World Tour event to be played using a best-of-three games scoring format as part of a trial.

(Last 16 and quarter-final matches are played best-of-three games, while the semi-finals and final revert to traditional best-of-five scoring).

APRIL 2018

PSA, in collaboration with the WSF, reach a cooperation agreement with the Olympic Channel in a partnership that will see all three organisations collaborate on content for the multi-platform global media destination.



JUNE & OCTOBER 2018

Front wall projection via interactive SQUASH technology is used at the June PSA World Series Finals in Dubai and at the October Youth Olympic Games in Buenos Aires, Argentina. This enhances event presentation through projecting replays, interviews and advertising onto the front wall between games and matches, along with branding opportunities.



FEBRUARY 2019

PSA signs with Stream Live Squash on Facebook Watch to bring live matches from the PSA Tour to Facebook Watch to territories outside of Europe and Japan on a non-exclusive basis.



JUNE 2019

PSA link with Dailymotion, the world's second largest video platform, who will host video on demand content from the PSA World Tour.

Many photos gratefully received from Steve Line.

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