

[www.starnipc.com](http://www.starnipc.com)

# StarnIPC Systems

Engineered  
Solution for  
Infection  
Prevention  
and Control

**STARN IPC+**  
A STARN COMPANY

# OUR MISSION

---

*As part of Starn Group, StarnIPC is committed to protecting your patients, staff and equipment from the impact of potentially hazardous conditions. Our experienced and reliable teams ensure we deliver the right outcomes for you. Working together, we minimise infection risk through our tailored specialised services that focus on safely managing environments. Starn Group has global reach and a unique set of products and services that support the effective management of working environments across a wide range of industries wherever you need us.*



AGILE



TRUSTWORTHY



SUPPORTIVE





## INTRODUCTION

**StarnIPC is a member of Starn Group. Starn Group is a safety-focused Global network of companies with operating hubs in the UK, USA, Canada, Australia, the Middle East, and Malaysia. Our primary objective is to ensure the safety of people.**

**As an agile business with a reputation for problem-solving and innovation, Starn Group's extensive experience in utilising negatively pressurised modular enclosures to create safe working environments in hazardous areas led us to develop a range of products to overcome some of the challenges facing a wide range of sectors as a result of the recent health crisis.**

Starn Group redirected its business focus, expertise, and resources to work together with the public and private health sectors to solve problems, provide solutions and to support business activity.

Guided by a range of standards and guidelines Starn Group researched various recommendations for infection prevention and control, including the use of Negative Pressure Isolation Rooms (NPIRs) and isolation pods. The need for NPIRs and isolation pods is foremost to prevent the airborne transmission of infectious diseases in healthcare facilities when performing Aerosol Generating Procedures (AGPs), or when providing care to patients with severe respiratory symptoms. A recent study has shown that certain infectious diseases can remain viable in aerosol form, under certain conditions, for 3 hours. This has significant implications for patient footfall when considering guidelines surrounding Post Aerosol Generating Procedure Fallow Time (PAGPFT).



Starn Group has a proven track record of working with its clients to find innovative solutions. It is with that mindset that it has have worked to understand the needs of the health and dental sectors and has used its resources to establish StarnIPC, which is specifically positioned to assist rapidly deliver optimised solutions.

The hierarchy of control, when applied to risk management illustrates the value of 'engineering controls' to mitigate risk. StarnIPC's innovative solutions are all 'engineering controls' specifically designed to mitigate the risk of associated infections to frontline health care workers and the public. With the implementation of StarnIPC systems, the risk of transmission can be effectively managed in any environment where people work or learn within close proximity. Guidelines recommend a minimum amount of Air Changes per Hour (ACH) in order to minimise the risk of transmission occurring.

There are currently a limited number of permanent negative/positive pressure isolation rooms in the healthcare system and many schools, dental practices and legacy buildings do not have adequate ventilation systems or the required number of ACH to meet current guidelines.

StarnIPC has a proven track record of installing its range of infection prevention and control products to rapidly increase capacity, reduce fallow time and help to mitigate associated infections within the dental and medical facilities. StarnIPC products include:

### **StarnIPC SafeRoom**

The StarnIPC SafeRoom is a portable anteroom (airlock entrance) system with HEPA- filtered ventilation which can convert existing rooms into Class-N negative pressure isolation rooms (NPIR) or Class-P positive pressure isolation rooms (PPIR).

### **StarnIPC SafeClinic**

The StarnIPC SafeClinic is a standalone temporary negative pressure isolation pod with an airlock door. In addition to isolating infectious patients, the SafeClinic can also be used to allow Aerosol Generating Procedures (AGPs) to be conducted safely, either inside or outside of existing medical facilities.

### **StarnIPC SafeCleanse**

The SafeCleanse system is a low-cost, small-footprint and impact air scrubbing unit which helps limit the spread of infections in any existing room where, unless a window is open, no air changes would normally occur. By installing these units in offices, schools, dental surgeries, waiting rooms or indeed any room without sufficient ventilation, you are mitigating the risk of infection-transmission between individuals by achieving a minimum of 10 air changes per hour.

**All StarnIPC's products have been designed to comply with relevant NHS and Government guidelines, WHO guidelines and hospital design and installation standards.**

**We understand that many businesses are under significant strain. StarnIPC can provide assistance to reduce the impact of the pandemic.**



## SAFEROOM

The StarnIPC SafeRoom is a portable anteroom with the ability to convert existing rooms into negative pressure isolation rooms (NPIRs) which can help to protect workers and patients from the risk of Healthcare Associated Infections (HCAI), which pose a significant threat to the capacity of our healthcare systems during the current Global health crisis.

The SafeRoom can be designed to fit to an existing doorway and form a double door 'airlock' entrance. Accompanying HEPA-filtered ventilation maintains a negative pressure barrier within the room and helps to ensure aerosols carrying viruses cannot be transferred.

By utilising SafeRooms in your healthcare facility, patient numbers can return to near-normal levels with a full range of Aerosol Generating Procedures (AGPs) and treatments being carried out, safely.

By utilising negative pressure and HEPA filtration, SafeRooms can be used to convert existing structures including Intensive Treatment Units (ITUs), Emergency Departments (EDs) and dental clinics into NPIRs,

therefore isolating highly infectious patients and containing infectious aerosols within the room.

The SafeRoom also provides an engineering-controlled space for performing administrative and PPE risk management measures including the donning and doffing of PPE, hand hygiene and the separation of clean and dirty workflows.

SafeRoom units are designed to comply with Infection Prevention and Control guidelines and internationally recognised design guidelines.

We offer a range of commercial options to suit your requirements. These include: rental, managed service, sales and service, and sales.

**For a bespoke proposal, please get in touch.**

### KEY FEATURES

- PROTECTS HEALTHCARE WORKERS AND PATIENTS BY MITIGATING HCAI ENGINEERED RISK MANAGEMENT CONTROL
- HEPA FILTRATION
- INTEGRATED PATIENT OBSERVATION WINDOWS
- TEMPORARY INSTALLATION
- HIGHLY PORTABLE AND DURABLE
- QUICKLY AND EASILY DEPLOYED
- FLAME-RETARDANT
- MEETS THE REQUIREMENTS OF NEGATIVE PRESSURE AND POSITIVE PRESSURE ISOLATION ROOMS
- DESIGNED AND MANUFACTURED IN THE UK
- END-TO-END INSTALLATION, COMMISSIONING, MONITORING AND REMOVAL SERVICE AVAILABLE



Figure 1:  
StarnIPC SafeRoom

**MHRA Registered**

### TECHNICAL SPECIFICATIONS

Negative Pressure	Patient room -4 Pa (dependent on individual solution)
Monitoring	Differential pressure gauges
Size	Engineered to fit any doorway
Materials	Flame-retardant PVC / Aluminium frame
Airflow	Minimum of 12 ACPH (dependent on individual solution)
Air Filtration	H14 HEPA / G4 Prefilter
Installation Time	Approximately 8hrs including commissioning (dependent) on individual solution



## SAFECLINIC

The StarnIPC SafeClinic System is an engineered control measure which utilises the principles of Infection Prevention and Control (IPC) alongside pressurization and HEPA filtration to assist with the containment of infectious disease pathogens carried in droplet nuclei or aerosols in healthcare settings.

The SafeClinic isolation pods reduce the risk of Healthcare Associated Infections (HCAI), which pose a significant threat to the capacity of our healthcare systems during the current Global health crisis.

In addition to mitigating HCAI, SafeClinics also allow an at least 50% reduction of Post Aerosol Generating Procedure Fallow Time (PAGPFT) as described in NHS SLWG paper **SBAR Ventilation, water and environmental cleaning in dental surgeries relating to COVID-19** dated 17th July 2020.

By implementing our SafeClinic systems into your healthcare facility, patient numbers can return to near-normal levels with a full range of procedures and treatments being carried out, safely.

Our standard SafeClinic units are designed using bespoke, polycarbonate panels configured to suit your workspace. Each unit features an anteroom, which forms a double door 'airlock' entrance. Accompanying HEPA-filtered ventilation and monitoring systems maintain a



negative pressure barrier within the treatment area and ensure aerosols carrying viruses cannot be transferred. The SafeClinic isolation pods can be deployed in any medical setting such as Intensive Treatment Units (ITUs)/Intensive Care Units (ICUs), Emergency departments (EDs), dental Hospitals or private dental practices.

The modular structures comply with all relevant standards and building codes and are designed to comply with Infection Prevention and Control guidelines.

We offer a range of commercial options to suit your requirements. These include: rental, managed service, sales and service, and sales.

**For a bespoke proposal, please get in touch.**

**MHRA Registered**



Figure 8  
StarnIPC SafeClinic

### KEY FEATURES

- CLEAR POLYCARBONATE PANELS PROVIDE GREATER VISIBILITY TO FACILITATE DENTAL AND MEDICAL PROCEDURES
- REDUCES PAGPFT TO AS LITTLE AS 10 MINUTES
- BESPOKE DESIGN TO SUIT CLIENT NEEDS
- POLYCARBONATE PANELS ARE EXTREMELY EASY TO CLEAN
- ERGONOMIC DESIGN PROVIDES EASY ACCESS AND EGRESS TO THE SAFECLINICS
- PROTECTS HEALTHCARE WORKERS AND PATIENTS BY MITIGATING HCAI
- MEETS THE REQUIREMENTS OF NEGATIVE PRESSURE ISOLATION ROOMS
- ENGINEERED RISK MANAGEMENT CONTROL
- ANTEROOM AIRLOCK ENTRANCE
- HEPA FILTRATION
- DIGITAL MONITORING AND ALARM SYSTEM
- COOLING SYSTEMS CAN BE INCLUDED TO SUIT CLIENT AND ENVIRONMENTAL REQUIREMENTS
- INTEGRATED PATIENT OBSERVATION WINDOWS AND PASS THROUGH HATCHES
- QUICKLY AND EASILY DEPLOYED
- DESIGNED AND MANUFACTURED IN THE UK
- END-TO-END INSTALLATION, COMMISSIONING, MONITORING AND REMOVAL SERVICE AVAILABLE



### TECHNICAL SPECIFICATIONS

Negative Pressure	Patient room -4 Pa / Anteroom (dependent on individual solution)
Monitoring	Filter blockage visual lump/indicator
Dimensions	Can be manufactured to match your exact requirements
Airflow	Minimum of 12 air changes per hour (ACH) (dependent on individual solution)
Exhaust/Inlet Filtration	H14 HEPA / G4 Prefilter



## SAFECLEANSE

The SafeCleanse system is a low-cost, small-footprint and impact air scrubbing unit which helps limit the spread of infections in any existing room where, unless a window is open, no air changes would normally occur. By installing these units in offices, schools, dental surgeries, waiting rooms or indeed any room without sufficient ventilation, you are mitigating the risk of infection-transmission between individuals by achieving a minimum of 10 air changes per hour. By utilising SafeCleanse units, the risk of transmission of any airborne pathogens, from the common cold to Covid-19, between staff, pupils, or members of the public is significantly reduced. By limiting associated infections, continuity of operations can proceed at optimum levels due to reduced sickness days.

To limit the impact on site, air is extracted outside through a window which is covered by a clear PVC coated polyester panel which does not impact on natural light flowing into the space. By covering the window with a PVC panel, air is prevented from circulating back into the room. For ease of cleaning, the duct work leading from air scrubber to the window is covered by the same PVC coated polyester material.

Our SafeCleanse systems provide a low-cost alternative to retrofitting complete ventilation and HVAC systems. By utilising our portable air-scrubber, regulation air changes can be achieved without excessive costs and disruption to ongoing operations of your facility.

Utilising SafeCleanse units in Dental environments can reduce fallow time between patients from 30 to 10 minutes, ensuring patient footfall can return to normal levels. Additionally, SafeCleanse units allow increased treatment options, providing increased revenue and increased standards of patient care.

Pending legislation means schools, offices, nursing homes and waiting rooms may become subject to guidelines surrounding adequate ventilation. The installation of SafeCleanse units allow these spaces to meet minimum air change



guidelines without the need for costly and intrusive building work, offering a permanent solution without disruption whilst simultaneously securing the safety of those working in environments where there is a high risk of transmission of infection.

The transportable units are compatible with all relevant standards and building codes and are designed to comply with Infection Prevention and Control

### KEY FEATURES

- BESPOKE DESIGN TO SUIT CLIENT NEEDS
- PROTECTS THOSE WORKING WITHIN THE AREA WHERE THE UNIT IS INSTALLED BY INCREASING VENTILATION
- LOW-COST ALTERNATIVE TO RETRO-FITTING COMPLETE VENTILATION AND HVAC SYSTEMS
- CREATES A COMFORTABLE WORKING ENVIRONMENT
- HELPS MITIGATE TRANSMISSION BETWEEN STAFF AND PUPILS
- UNIT ACHIEVES A MINIMUM OF 10 AIR CHANGES PER HOUR
- INSTALLATION IN AS LITTLE AS 2 HOURS
- CAN REMOVE THE NEED FOR FALLOW TIME
- REVENUE GENERATING DUE TO INCREASED TREATMENT OPTIONS AND PATIENT FOOTFALL
- 1 UNIT PER 120 M3
- ENGINEERED RISK MANAGEMENT CONTROL
- HEPA FILTRATION
- QUICKLY AND EASILY DEPLOYED
- DESIGNED AND MANUFACTURED IN THE UK
- END-TO-END INSTALLATION COMMISSIONING, MONITORING AND REMOVAL SERVICE AVAILABLE

guidelines. They also come in a range of colours to seamlessly fit into their surroundings.

We offer a range of commercial options to suit your requirements. These include rental, managed service, sales, and service, and after sales.

**For a bespoke proposal, please get in touch.**

## FREQUENTLY ASKED QUESTIONS SAFECLINIC

QUESTIONS	ANSWER
What fabric is used?	PVC coated polyester
What is the frame used for support?	Powder coated mild steel tube frame
Is the PVC fabric fire rated?	Can be used in conditions up to 50°C
Can bleach cleaning products be used?	Bleach solutions greater than 0.1% (1000ppm) active chlorine (i.e. 10% bleach solutions) may damage the Safe-Clinic.
What is the minimum ACH?	12 ACH
What is the maximum ACH?	30 ACH
What filtration is used at air intake?	G4 particulate filter
What filtration is used at extraction point?	HEPA 14- 99.99% affective
Negative Pressure Unit (NPU) power supply?	230v or 110v
NPU current in amps?	3 AMPS
How do you use NPU variable control?	Turn dial to increase or decrease ACH rate
db levels of NPU?	57/59 db at bed/chair location
NPU pre-filter change rate?	In accordance with host facility procedures
NPU DOP test schedule?	6 months inspection is required
Fallow times within the SafeClinic?	See table below (Appendix A)
NPU control unit location?	Always inside the SafeClinic
NPU placement inside the SafeClinic?	NPU shall always be placed at lower levels to best capture droplets
NPU CFM-M3/H?	CFM 350-M3/H 590
How long does installation take?	8 hrs (Depending on size)
How long does commissioning take?	3hrs
How long does it take to dismantle?	4hrs
What is the maintenance and servicing schedule?	6 months inspection is required on NPU and steel support frame
What is the maximum height of the SafeClinic?	3 metres
How does the system ACH operate?	Air is moved (forced) through the G4 filters located in the airlock walls and filtered through the NPU creating a filtered negative pressure isolation area
How do you enter and exit the SafeClinic?	Only open one airlock door at one time to maintain SafeClinic integrity
What ductwork is used?	150mm diameter flexible ducting or 225x90mm rectangular ducting
Where does the extract duct terminate?	Preferably to outside atmosphere
Is there a manometer used?	Manometer will always be located outside the SafeClinic for visual pressure indication



## APPENDIX A – FALLOW TIMES

AIR CHANGES/HOUR (ACH) AND TIME REQUIRED FOR AIRBOURNE-CONTAINMENT REMOVAL BY EFFICIENCY		
ACH	TIME (MINS) REQUIRED FOR REMOVAL 99% EFFICIENCY	TIME (MINS) REQUIRED FOR REMOVAL 99% EFFICIENCY
2	138	207
4	69	104
6+	46	69
8	35	52
10+	28	41
12+	23	35
15+	18	28
20	14	21
50	6	8

## WHAT STARN'S CLIENTS HAVE TO SAY...

**Dr Andrew Hall, Clinical Senior Lecturer,  
Dundee Dental School**

■ ■ *The installation of the dental pods has been a significant boost to our severely depleted teaching facilities in the wake of the Covid pandemic. Setting up dental pods covering dental chairs in open clinics at Dundee Dental Hospital has allowed us to undertake Aerosol Generating Procedures (AGPs) such as fillings and crown preparations once more during student clinics. While there are some side surgeries for mainly staff use at Dundee dental hospital, we must use ventilation provided by an open window and wait up to 40 minutes for any aerosol to disperse. Pods allow us more places where we can teach our students and only wait 10 minutes for the aerosol to disperse.*

*This means we can start to address the backlog in student teaching and experience which has arisen with this significant change in the practise of dentistry. While there is still much work to do, pods are a big step in the right direction.* ■ ■

**Eve Daniell a 5th year undergraduate student at  
Dundee Dental Hospital**

■ ■ *We are a handful of students that have been fortunate to be able to continue our studies. The clinical training is of course, essential and it has been frustrating being unable to progress though we understand it's for the safety of not only us but also our patients. The SafeClinic technology has allowed that progression and now that I know how effective it is, I can see the technology being used in dental practises as we, as a profession, move towards a sense of normality – it's a solution that it makes sense to use.* ■ ■

**Dave Hodgson, Technical Manager –  
Health, Teesside University**

■ ■ *From initial brief to installation, the Starn team have been a pleasure to work with, both being professional and respectful of our requirements. It's resulted in an ideal solution that the team are really pleased with, and very much looking forward to the return of patients for AGP procedures which will have a positive impact on our community.* ■ ■

**Dr J Antrobus, Consultant in Anaesthesia  
and Intensive Care**

■ ■ *The STARN Group created 2 bespoke infection control pods for our Intensive Care Unit, and we are really pleased with the end result. They incorporated all of our design requests and were able to build into our existing infrastructure. We were very impressed with just how rapid the design and build process was, and the units were assembled and commissioned within a very short timescale meaning any disruption to our unit was minimised. The team have been fantastic to deal with - professional team, lots of helpful suggestions, easy to get hold of, and rapid to reply to any queries we had. Highly recommended!* ■ ■

**Robert Donald, General Dental Practitioner,  
Windsor House Dental Practice, Nairn –**

■ ■ *Starn was able to incorporate all of my design requests into the existing infrastructure and produced a "bespoke" ventilation system that not only had minimal disruption to the practice infrastructure, but maximum impact in reducing the fallow time to 10 minutes between patients who required an AGP. 3 surgery units were assembled and commissioned very quickly and any disruption to our practice was minimal. James and his team have been very easy to deal with and responded quickly to any queries I had about the design and the install. The result is a ventilation system that is extremely efficient and very cost effective.*

*For all of these reasons, I can highly recommend James and Starn Group to anyone who is looking for a solution to their dental ventilation problems.* ■ ■

**The opinions expressed are my own personal opinions and do not reflect the views of any other organisations I am associated with.**



## **UK**

### **Starn Group - Headquarters**

Strathmore House, Charles Bowman Avenue,  
Claverhouse Industrial Park, Dundee, DD4 6LG

**T** +44 (0)1382 814 122

**E** [info@starngroup.com](mailto:info@starngroup.com)

## **AUSTRALIA**

### **Safehouse – Western Australia**

1 Reggio Road, Kewdale, WA 6105

**T** 61 (0)8 9353 3752

**E** [info@safehousegroup.com.au](mailto:info@safehousegroup.com.au)

### **Safehouse – Northern Territory**

U1/17 Willes Road, Berrimah, NT 0828

**T** +61 (0)8 8947 2599

**E** [info@safehousegroup.com.au](mailto:info@safehousegroup.com.au)

## **MIDDLE EAST**

### **Safehouse Habitats Middle East**

#### **Oil Well & Gas Equipment Installation LLC**

ICAD-M41-6AB1-Building C,

Units: 8,9,10. Mussafah,

Abu Dhabi, UAE. PO Box: 93300

**T** 971 (0)2 5543043

**E** [info@starngroup.com](mailto:info@starngroup.com)

## **USA**

### **Safehouse USA, LLC**

11490 Westheimer Road,

Suite 925, Houston, TX 77077

**T** +1 985.209.1703

**E** [info@starngroup.com](mailto:info@starngroup.com)

## **CANADA**

### **Dynamic Air Shelters - Calgary**

Suite 170, 200 Rivercrest Drive SE. Calgary, AB. T2C 2X5

**T** 1 (877) 772 -7734

**E** [sales@dynamicairshelters.com](mailto:sales@dynamicairshelters.com)

### **Dynamic Air Shelters – Newfoundland**

2A Hickman Street, PO Box 181,

Grand Bank, NL A0E 1W0

**E** [sales@dynamicairshelters.com](mailto:sales@dynamicairshelters.com)