



ONE-DAY SURGERY (OR) DESIGN & CONSTRUCTION

Profile



Engr. Rahim H.
Sales Engineer

Shaktek International Trd. Est., H.O. - JEDDAH

Engr. S. Ahmed Shaikh
CEO – SITE (Sales/ Service & Consultation)
+966 504665897



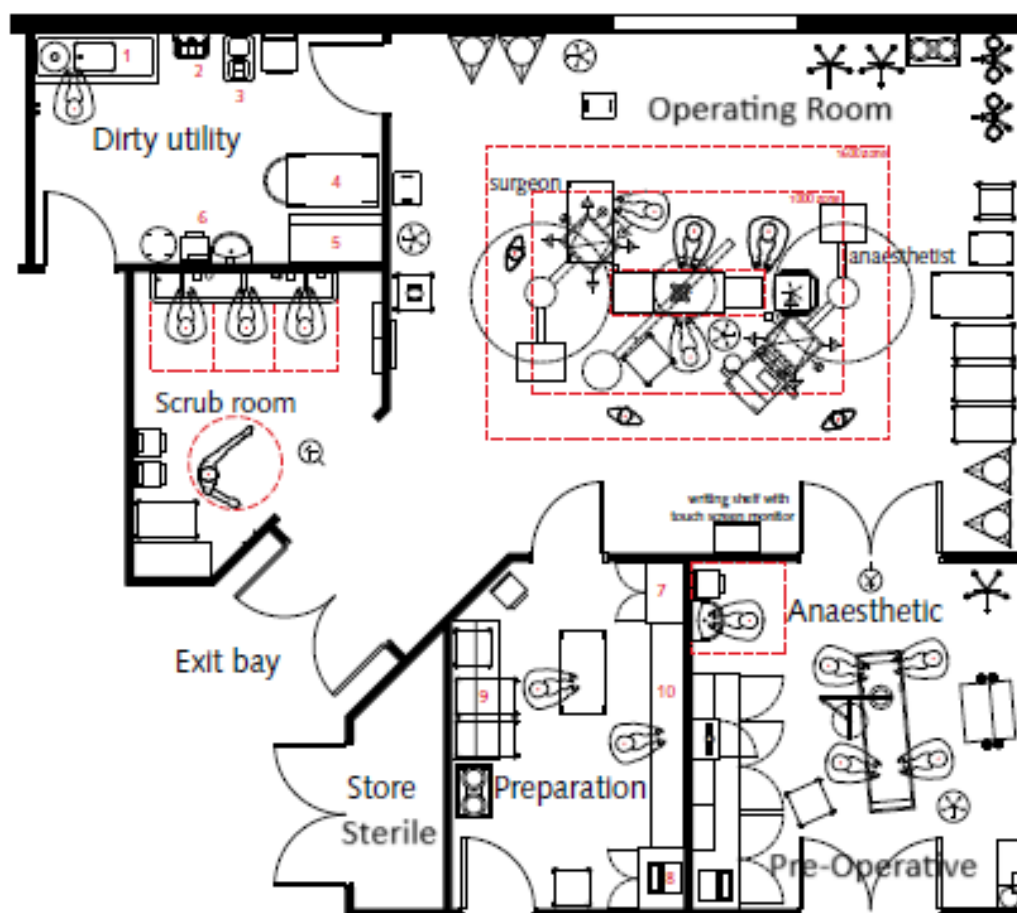
An ISO 9001:2015 Certified Management Company

MEMBER



Introduction

The Day Surgery/ Procedure Unit provides a safe and controlled environment for the operative care of patients undergoing diagnostic/ surgical procedures under local or general anesthesia and peri-operative care including post procedure recovery within a stand-alone facility. Such a facility may be on a hospital campus or independent of hospital care.



IDEAL SAMPLE LAYOUT OF ONE-DAY SURGERY

Description

A Day Surgery/ Procedure Unit is where operative or endoscopic procedures are performed; and admission, preparation and procedure occur within the same day with recovery/ discharge is completed in a period less than 24-hours. Therefore, the name "Day" Surgery does not necessarily imply that the unit only functions during daylight hours.

The Unit will include one or more Operating Rooms, with provision to deliver anesthesia and accommodation for the immediate post-operative recovery of day patients.

Many components of a Day Surgery Unit including the Operating Rooms, Recovery Rooms and Staff Change Rooms may be fully integrated with an Operating Unit.

A Day Surgery Unit may be collocated with an Endoscopy Unit, sharing some of the patient management facilities such as Reception, Waiting, Pre-Op holding and Recovery.

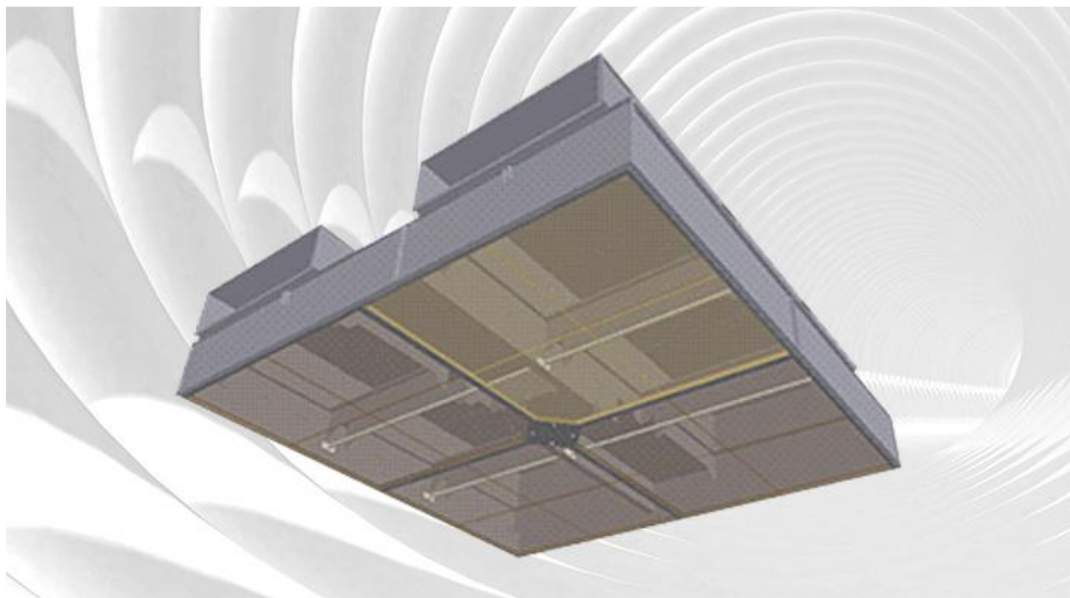
The range of procedures that may be undertaken in a Day Surgery/ Procedures Unit may include:

- Surgical procedures, particularly ENT, Dental, Plastic Surgery, Ophthalmology
- Endoscopy - gastrointestinal, respiratory, urology
- Electroconvulsive Therapy (ECT) for mental health inpatients
- Day Medical Procedures including intravenous infusions and minor treatments.
- Interventional imaging includes angiography, cardiac catheter procedures undertaken in imaging Units.
- Ortho, Hand, and Gynecology

The full list of surgeries which may be carried out in a Day Surgery/ Procedure Unit will depend on the facility's operational policy, availability of the necessary skilled staff. It will also depend on the ability to safely perform the surgery within the Unit without immediate support of a full Hospital's resources.

SHAKTEK SCOPE OF WORK:

Being clean air service professionals (Certified Engineer from CTCB-UK) & vast experience in Biomedical Equipments & Clinical Laboratory , CSSD , ICU , NICU , Isolation Rooms , BSL-2&3 Laboratories ,IV Pharmacy / Chemotherapy rooms , Endoscopy / Bronchoscopy Rooms & IVF Center design construction , we follow & implement the Saudi MoH & CBAHI standards in designing the ONE-DAY SURGERY Facilities as an independent & attached to hospital. It can further improve & updated to comply with International Standards, e.g. JCI, Canadian Hospital Accreditation.



STATE OF THE ART - STAINLESS STEEL CONSTRUCTION LAMINAR AIRFLOW PLENUM OVER OT, COMPRISING ULPA/HEPA FILTERS & BACKUP UVC GERMICIDAL LAMPS ANTIMICROBIAL PROTECTION WITH S/S PERFORATED GRILL.

OUR REFERANCES:



EKTHAR MEDICAL CENTER- JEDDAH (DSAMC) (IVF ORs 04



AL-AMEIS HOSPITAL -GIZAN – IVF ORs 02



Dr. Samir Abbas Medical Center- Riyadh ORs 03



SPECIALIZED EQUIPMENTS TO MAINTAIN AIR QUALITY INSIDE OR

OR HUMIDIFIER



OR DE-HUMIDIFIERS



SURGEN'S MONITOR



OR ELECTRICAL ISOLATION PANELS

AIR QUALITY MONITORS



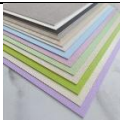


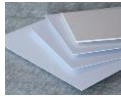



IN-LINE AIR PURIFIER FOR RECOVERY ROOM

NICOTRA-GERMANY FFU – PRE & POST OPERATIVE ROOMS



OR Rooms Wall Cladding OPTIONS:

Non-porous and seamless materials, Chemical Resistant, ideal for hygienic environments of ORs.

SR No.	Type of Cladding Material	Pics
1.	Vinyl	
2.	Korean	
3.	HPL (High-pressure laminates / Sandwich panels)	
4.	PVC	
5.	GLASS (Tempered ,12mm with background PVC printed paper customized designs)	
6.	Epoxy resin	
7.	Stainless Steel (AISI 304 0.5mm)	



Smart Air Quality Monitor, Indoor Air Quality Meter Detects CO2, PM2.5, PM1.0, TVOC, Temperature and Humidity Detector with Smart App and Intelligent Control



Precision Air Quality Detector for 6 Important Standards

Product Details

- Precision Air Quality Detector: Due to its precision laser sensor, The air quality meters conveniently and accurately measures air quality metrics for 6 important standards, including CO2, PM2.5, PM1.0, TVOC, temperature and humidity.
- Wi-Fi Enabled & Smart App: Set alarms and enjoy remote monitoring with the gas detector via 2.4GHz Wi-Fi and the Tuya App. You can easily see the air quality index and change monitoring curve through the app.
- Easy to Read & Data Storage: Equipped with a large display, the indoor air quality monitor is easy to read from a distance. You can also monitor it from the app. With a 1 year history record, you can view past data graphs anytime you want.
- Intelligent Control: Set your target air quality and link to the app. Smart fans, air purifiers, humidifiers, and space heaters will turn on and off automatically when the indoor air quality changes, if you sync them to the app (if the device cannot link the app as it lacks a "smart" feature, you can purchase a smart plug separately to make it possible).
- Widely Used: The temperature humidity monitor feature can be helpful for air quality detection in daily life, especially for the care of children, those with allergies, the elderly, and pets. You can use the air quality monitor in a greenhouse to detect and adjust the overall air index and it also can be used in an industrial setting.

Product Technical Details

Style: modern

Power Source: DC

Color: White

Product Dimensions: 1.5"D x 7.1"W x 4.7"H

Alarm: Audible

Compatible Devices: iPhone, Android phone

Sensor Type: Laser infrared sensor

Manufacturer: BROHOM USA/China

Part Number: ZN-PT02

Item Weight: 2.29 pounds

Item model number ZN-PT02

Shape: Rectangular

Voltage: 12 Volts

Included Components: air quality monitor,
charging cable

Batteries Included: No

Batteries Required: No

Features & Benefits

Detects: CO2, PM2.5, PM1.0, TVOC, Temperature and Humidity

Wi-Fi enabled with Smart App for remote monitoring.

Easy to read and data storage for a year.

Intelligent control to link with other devices.

Suitable for Hospital, IVF Lab, Micro Electronics Facility, Food Industries, settings.



ASHRAE STANDARD 170 APPLIED TO HOSPITAL OPERATING ROOMS.

An Overview of Air Distribution and Filtration Requirements

The main goal of operating room air distribution design is to maintain a hygienic surgical zone around the patient and surgical team. Patient well-being is critical, and a well-designed air distribution system can help mitigate surgical site infections.

[ANSI/ASHRAE/ASHE Standard 170 for the Ventilation of Health Care Facilities](#) provides design parameters for operating rooms that help create a sterile surgical zone through the air distribution system. These parameters include filtration and air change rate as well as velocity and diffuser coverage requirements over the operating table or surgical zone.



Filtration

The latest edition of ASHRAE 170 was published in early 2021 and states that operating rooms require a minimum filter efficiency of MERV 16 (previously MERV 14), although HEPA filters are typically used in these spaces. Additionally, the standard now states that “in ORs or Class 3 imaging rooms designated for orthopedic procedures, transplants, neurosurgery, or dedicated burn unit procedures, HEPA filters shall be provided and located in the air terminal device.”



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CR.: 4030407781 السجل التجاري
VAT No.: 310202198600003 الرقم الضريبي

Primary Diffuser Array

A key design requirement within ASHRAE 170 for operating rooms is the primary supply diffuser array. This is recommended with the sole intent of creating a large sterile zone around the patient and medical staff. The standard dictates that the coverage area of the primary supply diffuser array should include the surgical table and extend a minimum of 12 in. beyond the footprint of the surgical table on each side and that no more than 30% of this area may be used for non diffuser uses. This recommendation ensures that enough clean, filtered air is dispensed above the patient while accommodating the complex medical equipment present in today's modern operating rooms.

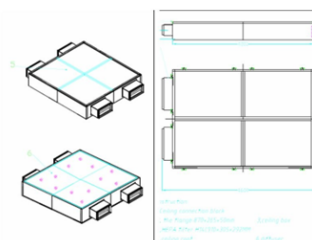
The airflow in the primary diffuser array should be unidirectional and downward, with an average velocity of 25 to 35 cfm per sq. ft. ASHRAE Group E nonaspirating diffusers, or laminar flow diffusers, are used to meet this requirement. Additionally, operating rooms require positive pressurization of at least +0.01 in.w.g. as well as a minimum of 20 total air changes per hour, with a minimum of four of those air changes being outdoor air. Finally, a minimum of two (four recommended) low sidewall return or exhaust grilles should be placed symmetrically around the room to promote the desired airflow pattern.



Specifications:

Laminar Air Flow Ceiling mount Air Supply System
 Size: External Dimensions: 240 L X 240 W X 35 H cm – S/S Canopy
 HEPA Filters: 12 Ea. 50LX50WX7H cm, Class 14, Efficiency 99.997% @ 0.3µm, Back pressure up to 200 Pa
 Back up Germicidal U Lamp Assy: $\lambda = 320\text{nm} - 12\text{ea}$
 Air Flow Rate : up to 820 L/Sec @ Air Discharge velocity 10cm above face 0.20 to 0.45 m/s , Flow Rate per Square Meter Unit – 100 to 200 L/s m²
 Power: 220V 50/60 V 200W, Supply Duct Inlet Size: 20WX40L – 04Ea

*Can be utilized to generate ISO Class 6 Clean environment air supply Positive Pressure Room (Technical installation & leak proof HEPA filters installation should be compliance)



OPERATING ROOM LAMINAR AIR FLOW STAINLESS STEEL FFU



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CR.: 4030407781 السجل التجاري
VAT No.: 310202198600003 الرقم الضريبي



✓ Key Achievements

Successfully achieved ISO Class standards for cleanrooms.

All critical IVF equipment installed and commissioned.

Complied with local health authority and international IVF facility standards.

Delivered the project within budget and agreed timeline.



📄 Final Remarks

The IVF Clinic is now fully operational and ready to provide high-standard reproductive health services. All required documentation, certifications, and as-built drawings have been submitted to the client.





The management system of

ShakTek International Trading Est.

Prince Mitib Street (Arbaeen Road), PO Box 7808, Aziziyah District, Unit-11,
3282, 23342, Jeddah, Kingdom of Saudi Arabia.

has been assessed and certified as meeting with the requirements of

ISO 9001:2015**Under the Scope:**

"Providing Clean Air Management Services (Installation of HVAC System).
Trading of Bio-Medical, Analytical, Lab & Industrial Equipment, it's Related
Calibration & After Sales Services."

**ACCREDITED**
Management Systems
Certification Body
MSCB-104

Certificate Number : SA220017

Issue date : 06-01-2023.

Valid till : 05-01-2026.

Authorized Signature

RICI Company Ltd.
www.ricionline.com

*This certificate remains valid subject to successful surveillance audits and maintenance of management system as per certification rules and procedures of RICI Company Ltd.

*Further clarification regarding scope of this certificate and applicability of ISO 9001:2015 requirements may be obtained from the organization.

*This certificate remains property of RICI Company Ltd., to whom it must be returned upon request.



Scan to Verify

CLEANROOM TESTING AND CERTIFICATION BOARD - INTERNATIONAL



Shaikh Shakeel M.

has passed theoretical examinations in

CLEANROOM TECHNOLOGY

A handwritten signature in black ink, appearing to read 'Ed Brown'.

Ed Brown, MSc, BSc,
Chairman, CTCB-I

A handwritten signature in black ink, appearing to read 'Bill Whyte'.

Bill Whyte, DSc, BSc,
Secretary, CTCB-I

21st June, 2012



CTCB-I - 234

International Accreditation Service
3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A.
www.iasonline.org

Certificate of Achievement

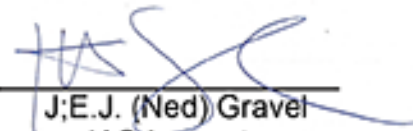
This is to Certify that

Er. Rahim Hamid Shaikh

has completed the online course and passed the exam on the date noted below:

**ISO/IEC 17025:2017 General Requirements for the
Competence of Testing and Calibration Laboratories**

17 Aug 2025


J;E.J. (Ned) Gravel
IAS Instructor




Raj Nathan, MEng.
President

Proud Member Since 3/1/2014

Member# 8240487

Membership Certificate



Shaping Tomorrow's
Built Environment Today

This is to certify

Mr Shakeel Manzur Shaikh
has been granted the grade of

Associate

and is entitled to all the rights and privileges as
provided by the Constitution and Bylaws of the Society

As a member of ASHRAE Society, I comply
with the ASHRAE code of Ethics.
(www.ASHRAE.org/codeofethics).

Secretary

A handwritten signature in black ink, appearing to read "Jeff Littleton".

JEFF H. LITTLETON

President

A handwritten signature in black ink, appearing to read "Thomas H. Phoenix".

THOMAS H. PHOENIX

Incorporated New York, 1895

Controlled Environment Testing Association

MEMBERSHIP CERTIFICATE

The Board of Directors
certifies that

Engr. Shakeel Ahmed Shaikh
Mohiddin Khan International Est. (MK International)

is an Individual Member of the
Controlled Environment Testing Association
and is recognized as a professional in the field
of controlled environment testing

December 4, 2019

Member Since
00010724

Member Number



December 03, 2020

Date

A handwritten signature in black ink, appearing to read "J. H. Shaikh", is written over the date field.

President and Chairman of the Board of Directors

شهادة تقدير APPRECIATION CERTIFICATE

Date: 31/01/2021

To whom it may concern,

Hereby we would like to appreciate,

SHAKTEK INTERNATIONAL TRD. EST. (SITE) – Jeddah
(Formerly, M.K. International (MKI) – Jeddah)

Represented by:

Engr. Shakeel M. Ahmed Shaikh

(CEO, Sales/Applications & Service – IVF Specialty, Member ESHRE & ASRM)

For their sincere timely endeavors for the completion of our new project –
Dr. Sameer Abbas Medical IVF Center at Riyadh complying to latest MOH
Standards.

We do appreciate their technical proficiency & latest knowledge about designing of
IVF Lab & OR facilities & honest / punctual technical support at this project.

We wish all the best for their future endeavors.

Best regards,

Dr. Sherif Ghazi (IVF Consultant)

CEO & Head of IVF Division

Dr. Sameer Abbas Medical Center – IVF Clinics

Jeddah / Riyadh / Al Khobar / Al Madinah – Saudi Arabia



مراكز الدكتور
سمير عباس

Dr. Smir Abbas Clinics

Riyadh

التاريخ: 1443/05/27 هـ

إلى من يهمه الأمر،

بهذا نود أن نقدر،

مؤسسة شاكتهك العالمية للتجارة (SITE) - جدة
(سابقاً، مؤسسة محي الدين خان العالمية - جدة)

يمثلها:

المهندس / شيخ شكيل م. أحمد

(المدير التنفيذي، المبيعات / التطبيقات والخدمات- تخصص أطفال الأنابيب ، وعضو الجمعية
الأوروبية لطب النساء والتوليد (ESHRE) و (ASRM)

لمساعيهم المخلصة في الوقت المناسب لإكمال مشروعنا الجديد - مركز الدكتور
سمير عباس الطبي لأطفال الأنابيب في الرياض وفقاً لأحدث معايير وزارة الصحة.

نحن نقدر كفاءتهم الفنية وأحدث معارفهم حول تصميم معمل التلقيح الاصطناعي
ومرافق غرفة العمليات والدعم الفني الصادق / الدقيق في هذا المشروع.

نتمنى كل التوفيق لمساعيهم المستقبلية.

مع أطيب التحيات،



د / شريف غازي (استشاري اطفال انابيب)

الرئيس التنفيذي ورئيس قسم أطفال الأنابيب

مركز د. سمير عباس الطبي - عيادات اطفال الانابيب

جدة / الرياض / الخبر / المدينة المنورة - المملكة العربية السعودية

شهادة تقدير
APPRECIATION CERTIFICATE

التاريخ: ١٤٤٥ / ٠٢ / ٢٨ هـ

Date: 13/09/2023

To whom it may concern,

Hereby we would like to appreciate,

SHAKTEK INTERNATIONAL TRD. EST. (SITE) – Jeddah

Represented by:

Engr. Shakeel M. Ahmed Shaikh

(CEO, Sales/Applications & Service – IVF Specialty, Member ESHRE & ASRM)

For their sincere timely endeavors for the completion of our new project Ekthar Medical Clinics – Jeddah under Dr. Sameer Abbas hospital & Medical IVF Center group, complying to latest MOH & CBAHI Standards.

We do appreciate their technical proficiency & latest knowledge about designing of IVF Lab & OR facilities & honest / punctual technical support at this project.

We wish all the best for their future endeavors.

Best regards,

Dr. Yasser (IVF Consultant)

CEO & Head of IVF Division

Ekthar Medical Center – IVF Clinics

Jeddah / Riyadh / Al Khobar / Al Madinah – Saudi Arabia



مؤسسة شاكتهك العالمية للتجارة - جدة

يمثلها:

المهندس/ شيخ شكيل م. أحمد

مدير التنفيذي، المبيعات / التطبيقات والخدمات- تخصص أطفال الأنابيب ، وعضو الجمعية

الأوروبية لطب النساء والتوليد

لمساعيهم المخلصة في الوقت المناسب لإكمال مشروعنا الجديد مركز اكثار الطبي - جدة ،
تابعة لمجموعة مستشفى الدكتور سمير عباس ومركز التلقيح الاصطناعي، المتوافقة مع أحدث
معايير وزارة الصحة و المجلس المركزي للاعتماد في مؤسسات الرعاية الصحية
..(CBAHI)

نحن نقدر كفاءتهم الفنية وأحدث معارفهم حول تصميم معمل التلقيح الاصطناعي ومرافق
غرفة العمليات والدعم الفني الصادق / الدقيق في هذا المشروع

نتمنى كل التوفيق لمساعيهم المستقبلية

مع أطيب التحيات،



د / ياسر (استشاري اطفال انابيب)

الرئيس التنفيذي ورئيس قسم أطفال الأنابيب

مركز اكثار الطبي - جدة - عيادات اطفال الانابيب

جدة / الرياض / الخبر / المدينة المنورة - المملكة العربية السعودية

Date: 23/12/2023

شهادة تقدير

APPRECIATION CERTIFICATE

التاريخ: ١٤٤٥/٠٦/١٠ هـ

To whom it may concern,
We are delighted to appreciate,

HealthPlus Fertility
هيلث بلاس للإخصاب

إلى من يهمه الأمر،
بهذا نود أن نقدر،

SHAKTEK INTERNATIONAL TRD. EST. (SITE) – Jeddah
(Formerly, M.K. International (MKI) – Jeddah)

مؤسسة شاكتك العالمية للتجارة (SITE) - جدة
(سابقاً، مؤسسة محي الدين خان العالمية - جدة)

Represented by:

Engr. Shakeel M. Ahmed Shaikfi
(CEO, Sales/Applications & Service – IVF Specialty, Member ESHRE & ASRM)

يمثلها:
المهندس / شيخ شكيل م. أحمد
(المدير التنفيذي، المبيعات / التطبيقات والخدمات- تخصص أطفال الأنابيب ، وعضو الجمعية الأوروبية لطب النساء والتوليد (ESHRE) و (ASRM))

For their sincere professional support & timely endeavors for the PPM & QC Tests
Validation Services for our facility – HealthPlus IVF Clinics / Center – Jeddah ,
complying to latest MOH Standards.

لدعمهم المهني المخلص ومساعدتهم في الوقت المناسب لخدمات التحقق من اختبارات
PPM ومراقبة الجودة لمنشأتنا - عيادات / مركز هيلث بلاس لأطفال الأنابيب - جدة ،
بما يتوافق مع أحدث معايير وزارة الصحة.

We do appreciate their technical proficiency & latest knowledge about designing of
IVF Lab & OR facilities & honest / punctual technical support at our facility.

نحن نقدر كفاءتهم الفنية وأحدث معارفهم حول تصميم معمل التلقيح الاصطناعي
ومرافق غرفة العمليات والدعم الفني الصادق / الدقيق في منشأتنا.

We wish all the best for their future endeavors.

نتمنى كل التوفيق لمساعدتهم المستقبلية.

Best regards,

مع أطيب التحيات،



Dr. Ramez Azab

Director of Operation
Health Plus IVF Center
Jeddah – Saudi Arabia

Er. Mohsin Kamal

FMS Engineer,
Health Plus IVF Center
Jeddah – Saudi Arabia

شهادة تقدير APPRECIATION CERTIFICATE

Date: 06/04/2019

التاريخ: 1440/08/01هـ

To whom it may concern,

إلى من يهمه الأمر،

Hereby we would like to appreciate,

بهذا نود أن نقدر،

M/s. M.K. International - Jeddah

مؤسسة محي الدين خان العالمية - جدة

Represented by:

يمثلها:

Engr. S. Ahmed Shaikh
(CEO, Clean Air Services Dept.
Sales/Applications & Service)

المهندس / شيخ شكيل أحمد

(المدير التنفيذي، قسم خدمات الهواء النظيف.
المبيعات / التطبيقات والخدمات)

For professional services towards Design &
construction of 04 ORs & Isolation Room (ICU)
to comply the CBAHI Standards.

للحصول على خدمات احترافية نحو تصميم وبناء 04
غرفة عمليات وعزل (ICU) للامتثال لمعايير
CBAHI /

Also, we do appreciate their FOC service of
Zoonocide / Z-71 surface de-contamination of
O.R.s & punctual timely after sales technical
support in this project.

أيضاً، ونحن نقدر خدمة فوك من زونوسيد / Z-71
تطهير سطح غرف العمليات ودقيق في الوقت
المناسب بعد الدعم الفني المبيعات في هذا المشروع.

We wish all the best for their future business
in this relevant field.

نتمنى كل التوفيق لأعمالهم المستقبلية في هذا القطاع
ذات الصلة.

Best regards,

مع أطيب التحيات،



المدير الطبي بالإنابة
د محمد فاروق لاوند
Medical Director Deputy
Dr. Mohd. Farouk Lawind

Prof. Dr. Mohamed Farouk Lawind. MD.
Medical Director
Bugshan Hospital
Jeddah -KSA
<http://www.bugshan.med.sa/>

د. محمد فاروق لاوندي
المدير الطبي
مستشفى بغشان - جدة
المملكة العربية السعودية

SHAKTEK INTERNATIONAL TRD. EST.

مؤسسة شاكتيك العالمية للتجارة



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Kingdom of Saudi Arabia