fittons

www.fittonsc.com

Gerry McGuire
CEO

> Welcome to Fittons Engineering Consultancy. The name of which is derived from my grandfather's family name "Fitton" and represents a mark of respect for the morals, discipline, commitment, integrity and attitudes both he and my father instilled in me.

Using and building on these attributes has always provided me with a basic guideline through life and form the basis for our company ethics.

With a personal experience of more than twenty eight years in the United Arab Emirates as an Engineering Consultant and several senior staff with similar experience in the UAE, our team understands the culture and client's expectations.

Fittons is a dynamic consultancy committed to utilizing the latest technology to provide clients with innovative solutions that range from feasibility studies through technical expertise for financial institutions to full designs and turn key projects across most sectors of the market.

We treasure our client relationships and look forward to developing new client relationships in the years to come.

Here at Fittons we believe every problem is merely a platform to take the opportunity to correct or improve a situation.

Clients across our industry provide us with repeat business and we believe that this is testament of our integrity and capability that new clients can trust and have faith in.

We work very closely with clients to ensure the correct cost effective solution is achieved and as such our clients benefit from our expertise and appreciate our efforts and every satisfied client represents immense added value to our business.

Gerry McGuire,
CEO Fittons Engineering Consultancy LLC

Introduction
District Cooling
Building Services
Specialised Engineering
Architecture & Master Planning
Commissioning

Services

ARCHITECTURAL

- Building Architecture
- Project Management
- Interior Design
- Master Planning
- AOR Services
- Development Feasibility

BUILDING SERVICES

- Heating Ventilation & Air Conditioning
- Drainage System Design
- Water Supply System Design
- Fire Fighting System Design
- Electrical Power System Design
- Low Current System Design
- CCTV & Access Controls
- Fire Alarm System Design

DISTRICT COOLING

- District Cooling Plant
- District Cooling Feasibility Study
- District Cooling Piping Network
- Lender's Technical Advisory Role

SPECIALISED ENGINEERING

- Piping Stress Analysis
- Estidama Pearl Rating
- Computational Fluid Dynamics
- Energy Modeling

COMMISSIONING MANAGEMENT, COMMISSIONING, SURVEYS & TESTING

- Surveys and Testing
- Testing
- Documentation
- Estidama Basic Commissioning
- Property Survey
- Sound & Vibration Survey & Analysis

Our Core Team

Gerry McGuire : CEO

Qualification : CEI Part2 (BSc. Hons.) - UK
Experience : Above 35 years – of which 25 years in U.A.E.
Professional Affiliations:
Chartered Engineer - UK
Chartered Environmentalist – UK
MIMechE – UK
MIET – UK (formerly MIEE - UK)
MASHRAE - USA
Member of Society Engineers – U.A.E.
Former Founder Board Member of Emirates Green Building Council (EGBC)

Ray Chevreau : Director - Operations

Qualification : Ph.D. (Mechanical Engineering) UK
Experience : Above 35 years
Professional Affiliations : Chartered Engineer – UK

Monica Mittal : Director - Architecture

Qualification : Master of Science – UK / Bachelor of Architecture -India
Experience : Above 20 years
Professional Affiliations : RIBA(2) / RICS
Member of Society Engineers – U.A.E.

Muhammed Tauqir : Projects Manager

Qualification : B.Eng. - India
Experience : Above 18 years
Professional Affiliations : Member of Society Engineers – U.A.E.

Jamal Saifudeen : Design Manager - Electrical

Qualification : B.Eng. - India
Experience : Above 21 years
Professional Affiliations : Member of Society Engineers – U.A.E.

Ibrahim Sheriff : Design Manager - Mechanical

Qualification : B.Eng. - India
Experience : Above 15 years
Professional Affiliations : Member of Society Engineers – U.A.E.

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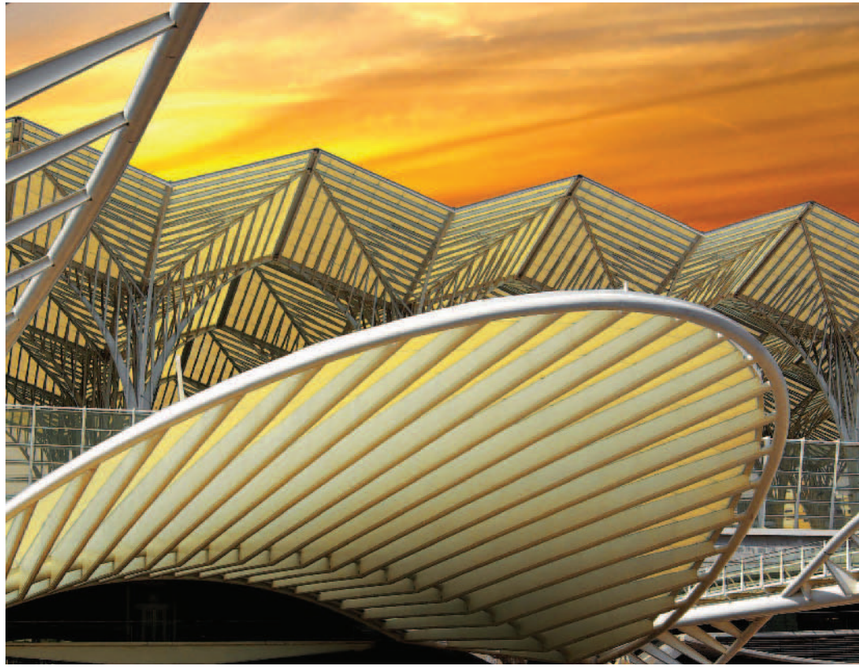
Architecture

With a highly talented and experienced team of architects, Fittons offers a full range of architectural services from conceptual and detailed design through to construction supervision.

Our designers have a common goal: to design buildings and spaces that are highly contextual and that work better for the people who inhabit or experience them. With world-class expertise – creative and technical, we help to realise buildings that are better because they are more useful and attractive to the people who own and inhabit them, more sympathetic to their context and more commercially sustainable.

Our architectural design team works closely with our highly skilled engineers to deliver creative solutions and an integrated design together -- we are known to shape ambitious buildings and spaces.

Individual members of our team have been active in the region for the past 20 years and have won major design competitions, industry awards and are invited speakers and panellists at regional industry exhibitions, seminars and lectures. They have gone on to deliver highly visible and iconic projects in the Middle East.



Master Planning

Fittons master planners are exceptional in their abilities to design and plan sustainable living spaces. From creative urban solutions and streetscapes to entirely new communities and the renovation and conservation of historic districts, our design objective is to create harmonious relationships between people and their environment, using technology to create connections and develop a sense of belonging, while respecting cultural heritage, social traditions and economic constraints.

We seek first to understand the unique challenges and opportunities of every project, financial goals, any regulatory drivers, and community perspectives. Our local experts have the understanding of cultures, people, and existing places. Combined, we partner with you to provide the best solutions and plans to meet your needs and stay grounded in what is important physically economically ecologically socially and politically.

Individual members of our team have led and been involved in the historic refurbishment and conservation of the Al Ain Oases – now a UNESCO World Heritage Site – the first in the UAE, when employed elsewhere.

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Project : Bhilai Master Residential Community
Size : 20,000 sq.m
Location : India

Amitra Hotel
Size : 20,000 sq.m
Location : Dubai

Ajman Meadows
Size : 200 Single Family 4 to 5 Bedroom Units
Value : USD 85 Million
Location : Ajman UAE

Regulation & Supervision Bureau HQ
Value : US $ 1.5 Million
Location : Abu Dhabi

Mixed Use Development
Location : Salalah, Oman

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Warehousing Facilities
Value : US $ 3.5 Million
Location : Dubai Investment Park

Jumeirah Beach House Kitchen
Value: AED 10 Million
Location: Dubai

Ibrahim Residential Building
Value : US $ 7 Million
Location : Sudan

Wai-Wai Snack & Beverage Factory
Value : US $ 3.5 Million
Location : Bahrain

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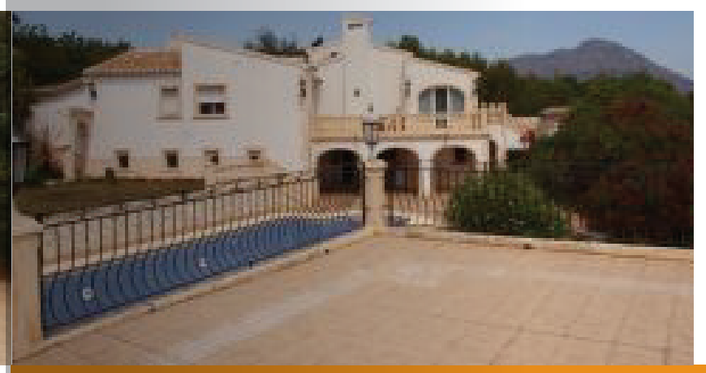
3 Bedroom Vila
Value: AED 2.5 Million
Location: London



5 Bedroom Vila
Value: AED 3 Million
Location: Alicante, Spain

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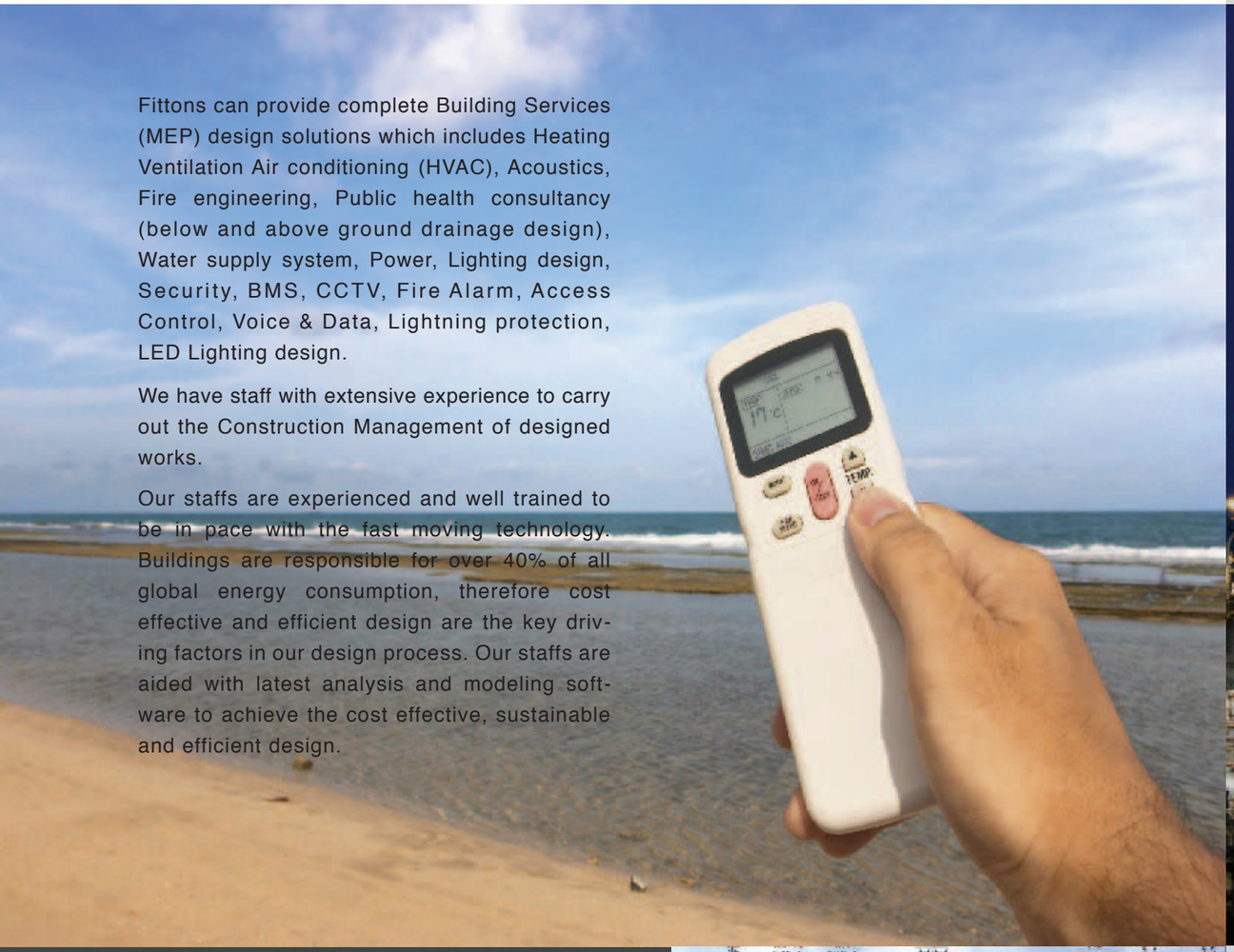
Building Services



Fittons can provide complete Building Services (MEP) design solutions which includes Heating Ventilation Air conditioning (HVAC), Acoustics, Fire engineering, Public health consultancy (below and above ground drainage design), Water supply system, Power, Lighting design, Security, BMS, CCTV, Fire Alarm, Access Control, Voice & Data, Lightning protection, LED Lighting design.

We have staff with extensive experience to carry out the Construction Management of designed works.

Our staffs are experienced and well trained to be in pace with the fast moving technology. Buildings are responsible for over 40% of all global energy consumption, therefore cost effective and efficient design are the key driving factors in our design process. Our staffs are aided with latest analysis and modeling software to achieve the cost effective, sustainable and efficient design.

We design based on international standards such as ASHRAE, CIBSE, International Code Council, NFPA, but we always adhere to the codes and standards of the host country.

We fully understand and have the experience working on complex projects as part of a multi-disciplinary design team, offering expert strategic advice from the initial stages of space planning through the tendering stages.

From high rise towers to university campuses, corporate headquarters, to hotels, places of worship to industrial buildings our expertise covers all market sectors.

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Projects

Project : Haya Hotel
Value : AED 80 Million
Location : Al Ain

Project : Refurbishment of Hilton Al Ain
Value : AED 15 Million
Location : Al Ain

Project : Cultural Village
Value : AED 50 Million
Location : Dubai

Project : Sheikh Khalifa Bin Zayed Masjid
Value : AED 150 Million
Location : Al Ain

Project : Al Zahra Club House
Value : AED 20 Million (Approx)
Location : Ajman

District Cooling System

We have staff with extensive experience in the District Cooling Industry and have collectively around one million Ton of Refrigeration of Design and Construction Experience in Design District Cooling industry.

We offer Consultancy Services from Feasibility studies through Master Planning and Concept to Full Designs for Plant Rooms, ETS's and External Distribution networks & Energy Transfer Stations.

We can design district cooling system based on direct connection, indirect connection or combination of both.

Fittons involvement in the initial stage of the project can result in huge saving to clients. For instance the initial cooling load assessment for Mohammed Bin Zayed district cooling was 175,000 TR.

Fittons reassessed the cooling load and were able to reduce the cooling load to 120,000 Tr.
This translated in a saving of approximately AED 350 million.

We can also save clients money by advising on the projected cooling load on the district cooling plant based on the phasing of the development, predicting when orders should be placed and when construction and build out needs to start thus deferring capital expenditure until necessary. For instance in Dubai Festival City district cooling scheme, the initial proposed cooling load was 225,000 TR with 5 DC plants. Our staffs reassessed the load and were able to reduce the cooling load to 125,000 TR with 3 DC plants. By adopting the phasing strategy the capital expenditure on constructing all 3 plants was deferred. Due to economic slow down changes were made to the Development. The current cooling demand is being served by one district cooling plant.

Further the capital expenditure was substantially deferred by initially building just 1 DC plant.

Lender's Technical Advisory Role

Fittons is one of the few Consultancy firms in the region which has the capabilities of providing Lender's Technical Advisory services.

We have successfully executed some of the prestigious District Cooling Projects such as Dhahran District Cooling Scheme for **Banque Saudi Fransi** and Jabal Omar Development District Cooling Scheme for **Bank Saudi Hollandi.**

With the experience of the projects such as above, we are well versed with the Bank requirements such as technical inputs in the Concession Agreements, O&M Agreements, EPC Agreements and End User Agreements. We can closely work with the Financial Advisors and provide necessary technical inputs for the project Financial Model.

District Cooling Feasibility Studies

Fittons perform feasibility studies through Master Planning and Concept to Full Designs for Plant Rooms, ETS's and Reticulation Pipe Networks.

The objective of the study is to determine the viability of the district cooling system for the development in comparison to other air conditioning system such as Air cooled Chillers, Split Units, Package Units etc.

The studies are based on life cycle cost analysis of each air conditioning system.

The studies also incorporate the different utilities tariff applicable for the respective development.

Fittons have been employed by various leading Master Planners during the inception stage of the projects to determine the Feasibility of the District cooling system for their development.

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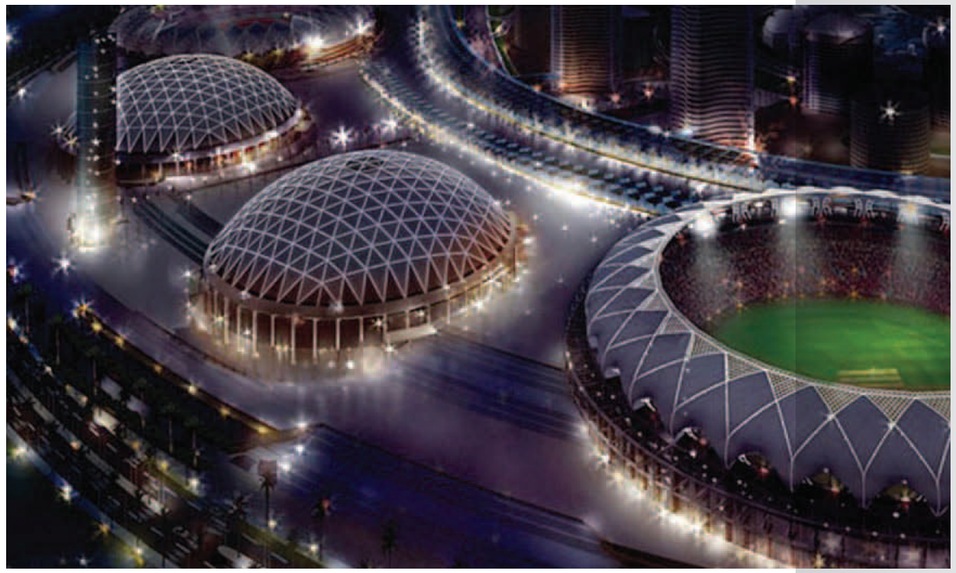
Dubai Festival City
Value : AED 25 Million
Location : Dubai, UAE
Role : DC Piping Network Design
Client : ADC / Tabreed

UAE University District Cooling
Value : AED 25 Million
Location : Al Ain, UAE
Role : Plant Design
Client : ADC / Tabreed

Jabal Omar District Cooling Scheme
Value : SAR 325 Million
Location : Mecca, KSA
Role : Lender's Technical Advisors
Client : Saudi Hollandi Bank/Saudi Tabreed

Mohammed Bin Zayed City District Cooling Scheme
Value : AED 1,000 Million
Location : Abu Dhabi, UAE
Role : DC Advisor to Master Planner
Client : KEO International/Abu Dhabi Municipality

Meydan District Cooling Plant
Value : SAR 325 Million
Location : Dubai, UAE
Role : Construction Supervision
Client : Drake & Scull International



Dubai Sports City District Cooling Piping Network
Value : AED 90 Million approx.
Location : Dubai, UAE
Role : DC Network Design
Client : Emicool

Dhahran District Cooling Scheme
Value : SAR 500 Million
Location : Aramco Dhahran, KSA
Role : Lender's Technical Advisors
Client : Banque Saudi Fransi/Saudi Tabreed

Jebel Ali Theme Park
Value : AED 1,000 Million approx.
Location : Dubai, UAE
Role : Feasibility Study
Client : Halcrow / Meeras

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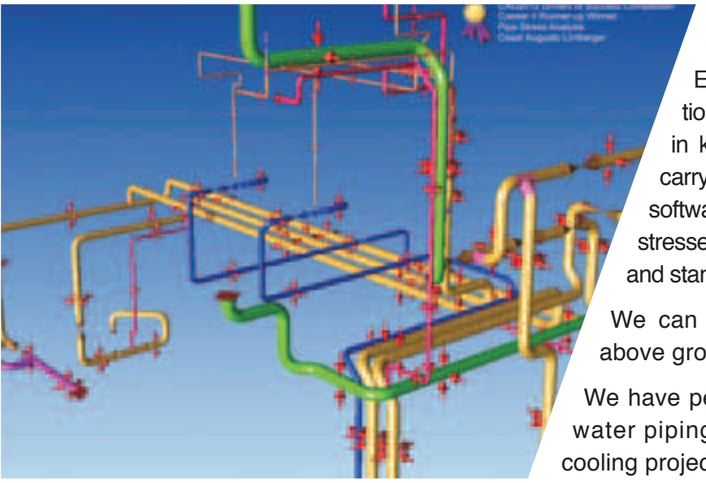
Specialised Engineering



Piping Stress Analysis

Ensuring the piping systems adhere to international codes and standards plays an integral role in keeping your system operational. Fittons can carry out piping stress analysis using CEASAR II software to evaluate the structural responses and stresses of the piping systems to international codes and standards.

We can carry out Stress analysis for buried and above ground chilled water pipes.

We have performed Stress analysis for buried chilled water piping network of 10 km of length in a district cooling project.

Sustainability - Estidama

Fittons have Pearl Qualified Professionals (PQP) certified by Urban Planning Council (UPC) of Abu Dhabi. Fittons have successfully obtained Pearl rating for projects with gross floor area up to 15,000 square meters. Depending upon client's requirement Fittons can provide the following assistance;

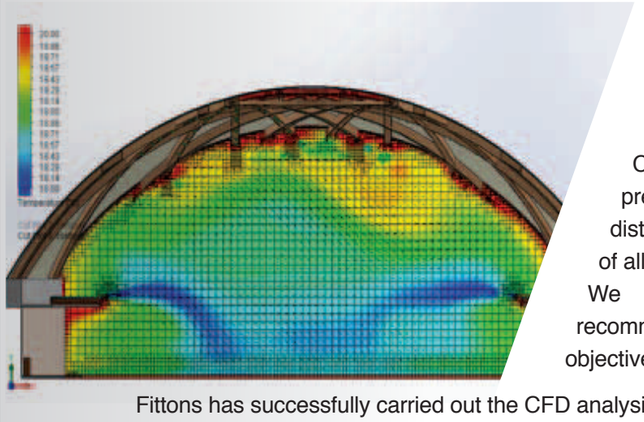
•Lead, assist and provide recommendations to the design team in achieving the desired pearl rating for the project.

•Prepare necessary Estidama documents based on the design documents and inputs from the designers.

•Review & comment on the Estidama documents prepared by the designers.

• Submit & obtain approval from Estidama / UPC.

CFD Modelling



Fittons has in-house capability of modelling Computation Fluid Dynamics (CFD) for HVAC air distribution design and Smoke management.

Computational fluid dynamics (CFD) software predicts 3D airflow, heat transfer, contamination distribution and comfort indices in and around buildings of all types and sizes.

We can model complex shapes and provide recommendations to the designers to achieve their design objectives.

Fittons has successfully carried out the CFD analysis of HVAC air distribution design and Smoke management for the H.H. Sheikh Khalifa Mosque at Al Ain. A snap shot from the project is shown on the left.

Energy Modelling

Fittons can perform energy modelling using dynamic simulation modelling software for the proposed building and for baseline building to calculate the energy consumption according to the building performance rating method outlined in Appendix G of ASHRAE Standard 90.1, using the minimum acceptable standards for building fabric, HVAC, service water heating, power, lighting and other equipment.

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Commissioning Management, Commissioning,Survey & Testing

Estidama Basic Commissioning

Fittons offers Basic Commissioning services as per Estidama IDP-R3 for both design stage and construction stage.. Our staffs have extensive expe-rience in commissioning of energy systems that covers equally all areas of building services.

With our experience in Estidama PQP services, we are thoroughly aware of the depth and intricacies of the documentation needed for Estidama Certification in relation to commissioning.

Our approach is to ensure that the designed systems are properly executed through the construction phase and the systems are properly commissioned to meet owners operational need.

Commissioning

* **Commissioning Management**
* **H.V.A.C Testing & Balancing**

Property surveys

* **Plant surveys**
* **Energy audits**
* **Thermographic surveys**
* **Asset validation**

Testing

* **Electrical testing**
* **Vibration testing**
* **Sound level & environmental testing**

Documentation

* **Operating & maintenance manuals**
* **Client training**

Sound & Vibration Survey & Analysis

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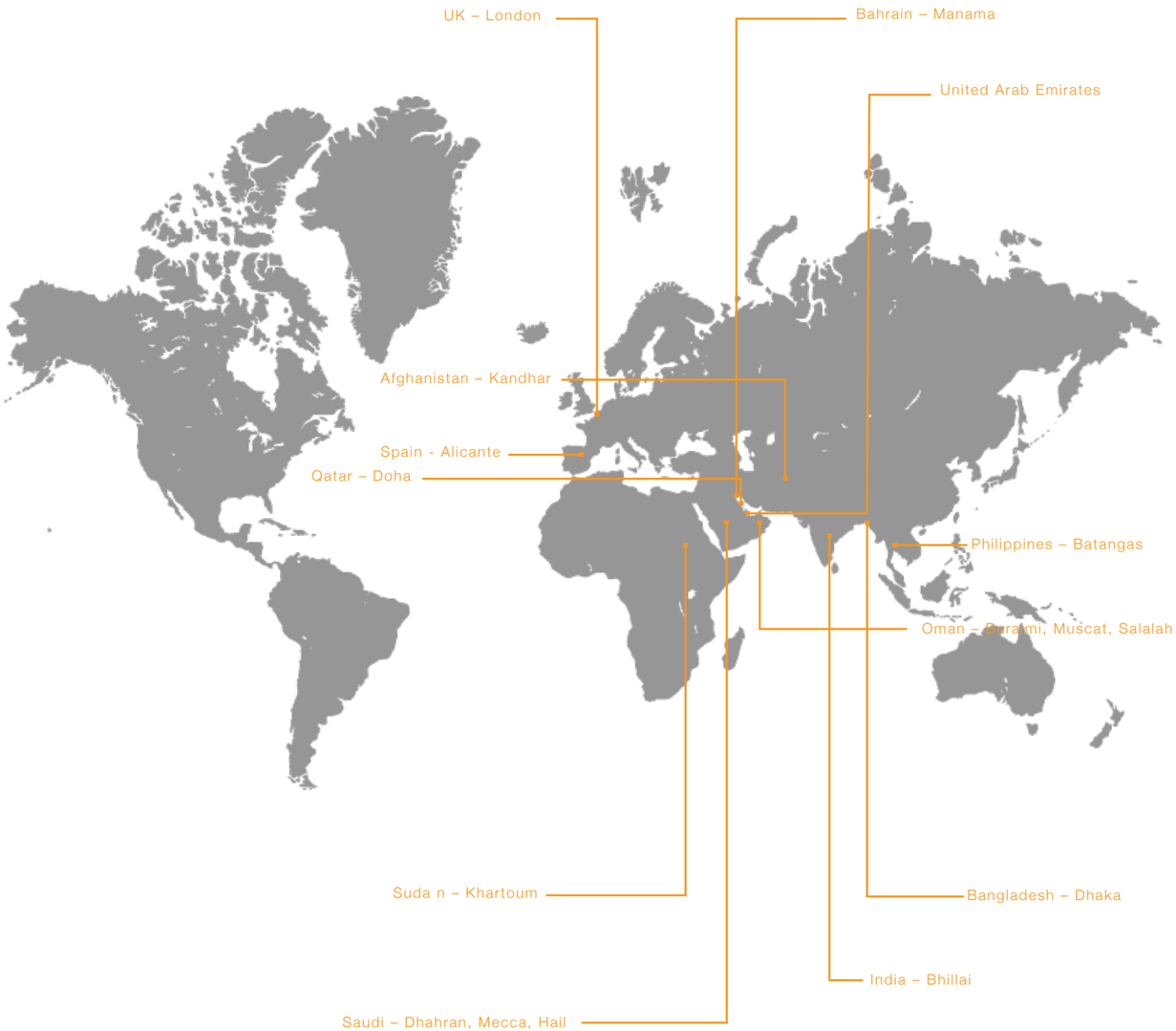
Where we have worked



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