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Issue 5

Innovate & Inspire

December 2018

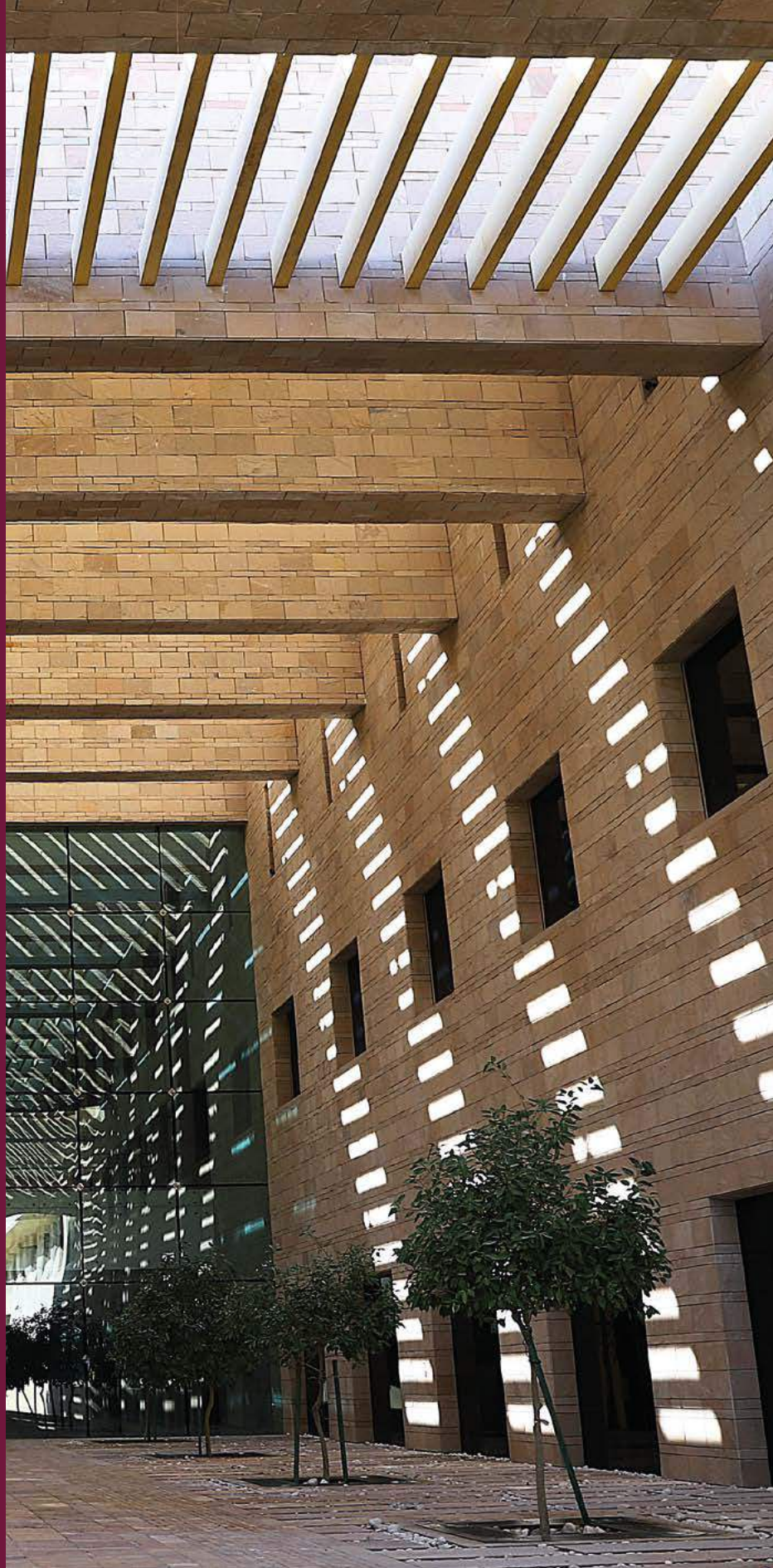
Generation Amazing

Fab Lab

Stars of Science

Qatar Creating Vision

The Government
Communications Office
of the State of Qatar



Issue 5

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Foreword

| *His Excellency Sheikh Saif bin Ahmed Al Thani*

It is my pleasure to introduce you to our fifth edition of *Q Magazine*, which sheds light on Qatar's innovative spirit.

Within these pages we learn about the world's first sustainable stadium being built ready for the 2022 FIFA World Cup, and Doha's newest smart city which brings Qatar's architectural heritage to life with the latest technology.

Going beyond Qatar's larger infrastructure projects, we interview entrepreneurs who have delivered life-changing advances in health and environmental protection through cutting-edge practices.

In Qatar, there is no idea that is too big or too small – there are only ideas that are worth pursuing, collaborating on and delivering.

Our last edition focused on some of Qatar's most influential trailblazers. These are the people who make Qatar's vision possible. One magazine is simply not enough to do credit to all of them. So, we have decided that #*Trailblazer*s will become a regular feature in future editions of the magazine, as we speak to the people behind Qatar's most exciting programmes and initiatives.

In this edition we focus on the people and organisations that have cultivated a rich environment of inventiveness and creativity. The pursuit of these values is rooted in our belief that innovation is the means to create a happier, healthier and more sustainable society – one that does not stop at Qatar's borders.

We take a look at how vastly different our international programmes can be – including Generation Amazing, which uses football to uplift thousands across the world, and Qatar Creating Vision, which brings eye care services to vulnerable communities for the first time, saving sight.

Finally, I am excited to announce that, to coincide with the publication of our fifth edition, we have also launched our brand new online platform: *QLife.com*

QLife.com is an online destination for curated content about Qatar – from sports and lifestyle, to innovation and technology. You will find stories from *Q Magazine*, alongside exclusive visual content – including video interviews and much more.

With this, I hope you enjoy exploring *QLife.com* and this latest edition of *Q Magazine*, and realise that, as we in Qatar pursue a brighter future, there is no limit to the ideas that can get us there.

Saif bin Ahmed Al Thani
Director of the Government Communications Office

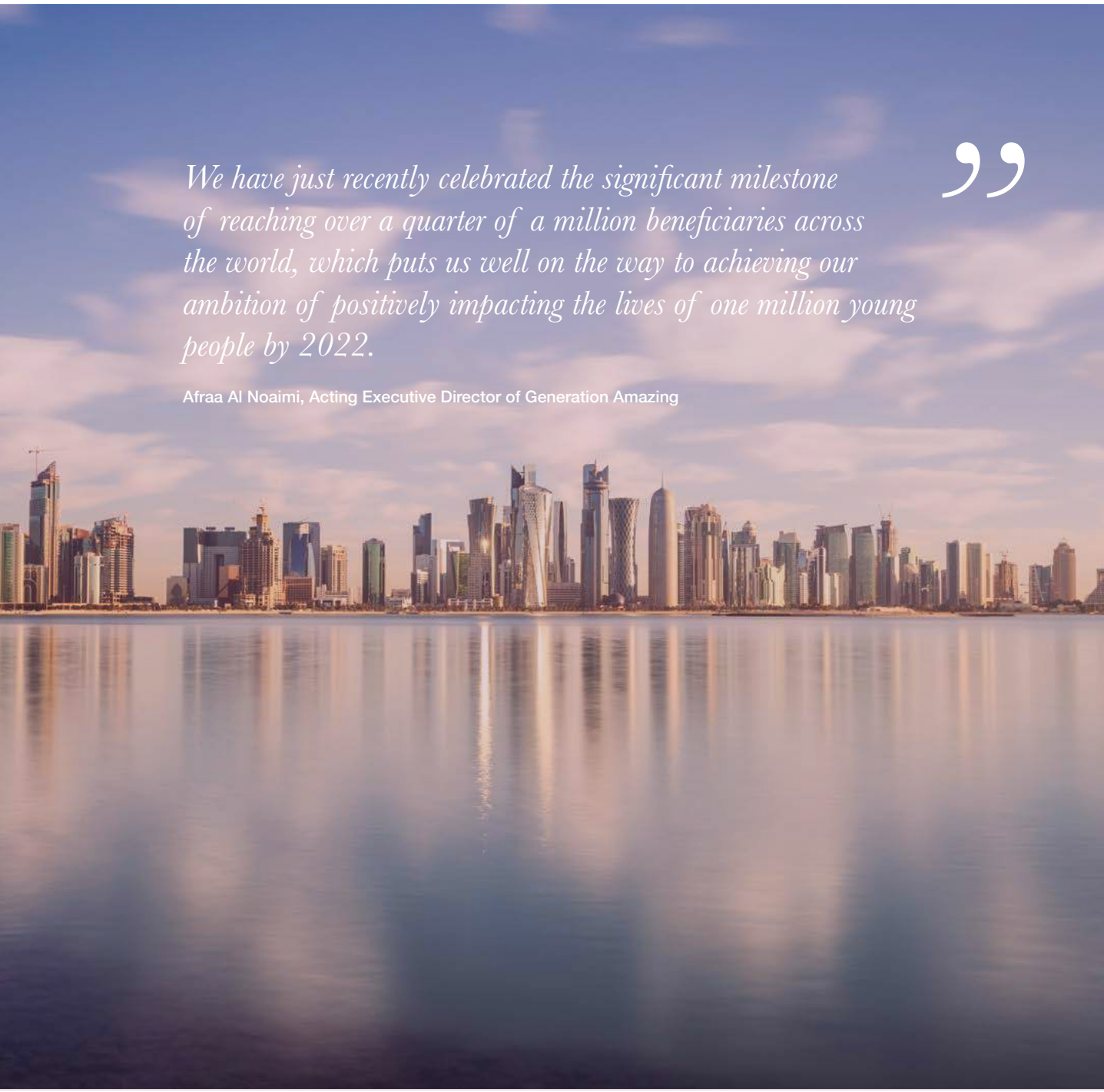
1

Environment

Sustaining economic and social growth is impossible without a holistic vision that places environmental preservation for Qatar's future generations at its heart.

This vision is reflected in all layers of Qatar's society – from the development of Doha's newest district Msheireb, which marks the re-emergence of Qatari heritage in the heart of the city, and the construction of the world's first sustainable stadium for the FIFA 2022 World Cup, to investing in the conservation of the world's second-largest dugong population in the Arabian Gulf.

Qatar's commitment to sustainability extends beyond our borders. Through programmes such as Generation Amazing we are empowering new generations around the world to transform their communities and stimulate social change.



We have just recently celebrated the significant milestone of reaching over a quarter of a million beneficiaries across the world, which puts us well on the way to achieving our ambition of positively impacting the lives of one million young people by 2022.

Afraa Al Noaimi, Acting Executive Director of Generation Amazing

| *A view from Msheireb Downtown Doha*

Ali Al Kuwari

Msheireb Downtown Doha: Where traditions meet cutting-edge development

Ali Al Kuwari explains how Doha's newest district will connect communities through sustainable and smart technology

Qatar is a nation built on age-old traditions. Nowhere is this more apparent than in Doha's latest development, Msheireb Downtown Doha.

It brings together the best of the past with modern innovative technologies and thinking, marking the re-emergence of Qatari heritage in the heart of the city.

Ali Al Kuwari, Acting Chief Executive Officer at Msheireb Properties, explains the genesis of the project, located in the oldest part of the capital.

'Msheireb Downtown Doha was born of a desire by the nation's leadership to redefine the course of the city's development and return to the cultural roots upon which Doha was founded,' he says.

'Msheireb is the world's first sustainable downtown regeneration project, reviving the old commercial district with a new architectural language which is modern yet inspired by traditional Qatari heritage and architecture.'

What does this mean in practice? Al Kuwari says: 'Msheireb Properties spent three years researching Qatari architecture and urban planning all over the world with the most respected experts in the industry, in order to realise an architectural language rooted in the best of the past that may be preserved for and by future generations.

'The Qatari tradition is reflected by the design of buildings, materials used, lay-out and preserving the names of streets. And the Heritage Quarter will revive Doha's historic district.'

The project brings alive the culture and traditions of Doha prior to the country's rapid economic development. With the relocation of the Qatar Financial Centre, it will be the new financial hub and downtown, embracing business and community in equal measure.

The area will have integrated smart technologies, super-fast connectivity, and state-of-the-art health and safety and environmental controls.

Transport links are key, including Doha's metro. Business travelers are also catered for with options that include the Al Wadi Hotel MGallery Doha, Park Hyatt and the Mandarin Oriental Hotel.

The new area is located in the heart of Doha, 20 minutes from the airport, and 15 minutes from the city centre, next to Souq Waqif and the Corniche.

The development has been carefully planned to be low-impact environmentally. Al Kuwari says: 'It is the first sustainable regeneration project of a downtown in the world, and all our buildings are characterised by their water and energy efficiency, leading us to be a very green and sustainable project. Once all of our buildings become operational, we expect that Msheireb Downtown Doha will be the most sustainable city district in the world.'

'That isn't our only world-first. Not only is it the first smart city in Qatar, our research has confirmed that it is one of the smartest city districts in the world,

| An apartment in Msheireb Downtown Doha

integrating advanced systems from the beginning. Elegant town houses and apartments with cutting-edge technology will make residents' lives very easy.'

Al Kuwari says: 'The Heritage Quarter is a historic area where traditional courtyard houses and the Msheireb Prayer Ground dating from the first decade of the last century have been restored, alongside a LEED Gold certified mosque.

'The Heritage Houses, commonly known as the Bin Jelmood House, the Company House, the Mohammed bin Jassim House and the Radwani House have transformed the Heritage Quarter and created an important cultural destination within the development.'

He adds: 'The four courtyard houses have been converted into culturally significant museums and exhibition buildings. Rooted in local history, these courtyards and spaces showcase important aspects of Qatar's history and memories of old Doha.

'Msheireb Museums aim to enliven local history in order to better understand Qatari identity and fully realise Qatar's aspiration for greatness. They celebrate the history of four century-old heritage houses in Doha's oldest district which have been transformed into museums.'

Even the name 'Msheireb' has significance, referring to an old well in the area where people used to come and drink water.

Al Kuwari says: 'That's why the area was called by that name, and it maintained the name until today. We are still using the name Msheireb to preserve our history and heritage, and to revive the old days when this area was the center of trade and business in Qatar. It is now a trademark that everyone knows. It is part of our heritage and history which we want to maintain for future generations.'

PUTTING THE TECH IN ARCHITECTURE

Qatar National Convention Centre

- The Centre was built according to the US Green Building Council's Leadership in Energy and Environment Design (LEED) Gold standard.
- QNCC is designed to be 32% more efficient than a comparable convention centre, and is fitted with over 3,500m² of solar panels, providing 12.5% of the Centre's energy needs.

Lusail Smart City

- Water-sensitive landscape plan featuring plants native to Qatar and minimising lawn area.
- Walls functioning as an artificial reef and providing habitat for various flora and fauna.
- "Smart" city design, with an intelligent traffic system, smart street lighting, and smart waste and water management.

RasGas Tower

- This tower was also built according to the US Green Building Council's Leadership in Energy and Environment Design (LEED) Gold standard.
- It was the first building in Qatar to receive this prestigious certification.

| *Mohammed Al Mulla*

#Trailblazer: Mohammed Al Mulla

Ras Abu Aboud Stadium: The world's first sustainable stadium

How Qatar's vision of a sustainable 2022 FIFA World Cup has led to ground-breaking architectural projects

Mohammed Al Mulla is the project manager for Ras Abu Aboud stadium. He is responsible for delivering one of the key 2022 FIFA World Cup venues, currently one of eight being built in Doha.

The 40,000-seat stadium is based on a unique modular design, using recycled shipping containers, and is set to be entirely dismantled and repurposed when the 2022 World Cup concludes.

It is a visionary sustainable design that looks set to be emulated by architects and designers around the world. The logistics involved are breath-taking, and the pressure to deliver intense.

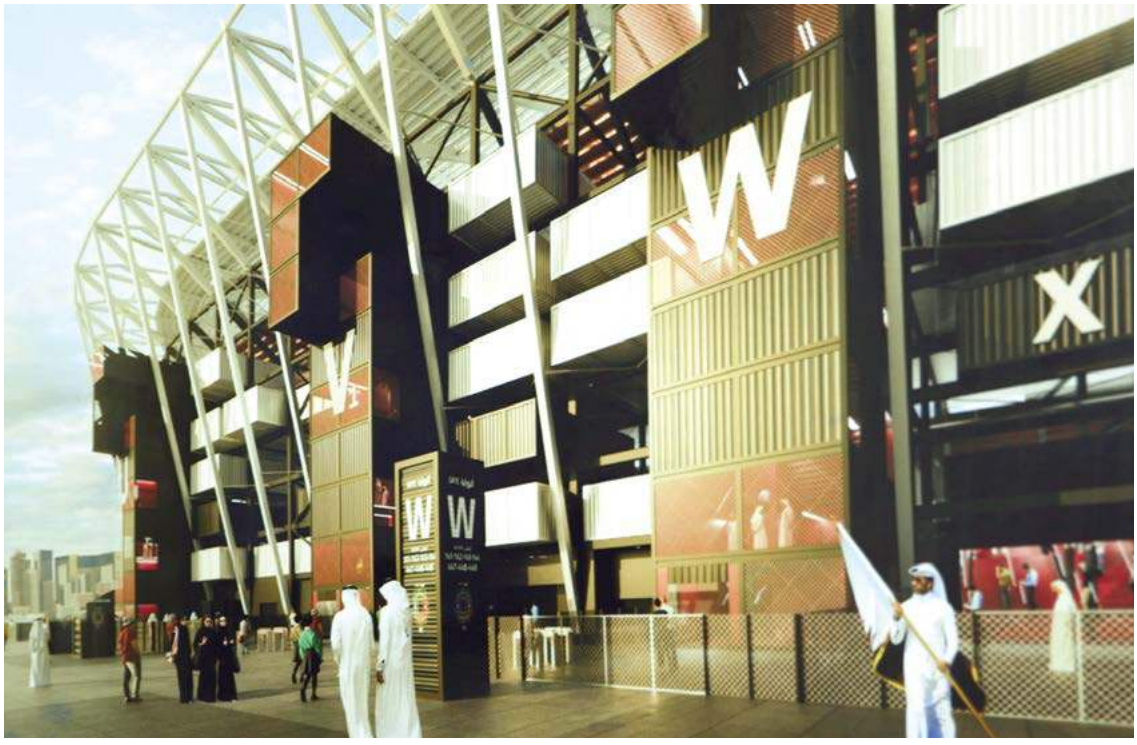
Ask Al Mulla to describe to a small child what he is doing, however, and his eyes light up. His hands begin to sort through an imaginary pile of multi-coloured bricks.

'The stadium will be built using the same concept as the toy every child has – Lego,' he says. 'In simple words, the main structure will be built of steel, and as we go up from floor to floor, we are going to insert the containers across the sides of the stadium, which reminds us of how children play with Lego.

'We can put it together easily, and at the end of the day we can take it apart, just as a child packs up his Lego, ready for further play.'

Simple, then – yet visionary. He explains: 'We were thinking through what the eighth stadium could look like, and came up with this unique concept of a sustainable stadium. We asked: 'What is going to benefit the people of Qatar – now, but also in the future?'

'What do they need? What do others around the world need? We want to leave a legacy, but we don't necessarily need eight stadiums



| *A CGI of Ras Abu Aboud Stadium*

| *A CGI of Ras Abu Aboud Stadium*

here in Doha all the time – this one can be packed up and reassembled elsewhere, even internationally. I think people will really appreciate what we have done, and the concept behind it.'

Al Mulla is passionate about the unique nature of the Ras Abu Aboud stadium. 'It is different from other stadiums being built in a traditional way,' he says. 'First of all, it can be carefully dismantled and used elsewhere in different forms – anywhere in the world. It is flexible, so can be reused as smaller stadiums.

'Also, because it is being made from reusable material, it has a shorter build time, it has a lower cost, we are using less construction material, and there is less waste on site, with lower carbon emissions. It is win-win.'

He adds: 'The VIP boxes, control rooms, operational rooms will all be made from shipping containers, allowing for flexible reuse of these components. The steel framework can be dismantled and used elsewhere after the World Cup. It is sustainability in action.'

The concept was dreamt up by Fenwick Iribarren Architects and each section of the stadium is separate. The Supreme Committee for Delivery and Legacy now see this as one of the jewels in the World Cup crown. Even the lavatories and concession stands can be taken out and reused.

The reuse of shipping containers is a nod to the seafaring trade conducted over centuries on the waters of the nearby Gulf, and give the stadium a functional forward-looking edge.

Reusable seats will complete the 450,000 square-metre venue, enviably located on the shores of the sparkling Gulf. It is also highly accessible for the many overseas

AL MULLA'S STORY EXTENDS FAR BEYOND THESE PAGES. GO ONLINE TO **QLIFE.COM** TO SEE AN EXCLUSIVE INTERVIEW ABOUT HIS VISION AS ONE OF QATAR'S #TRAILBLAZERS.

visitors expected in Qatar, being 1.5 km from Hamad International Airport in a previously mainly industrial area of the city.

After the World Cup, the site will be repurposed as a glamorous waterfront development for local residents. Again, the low-impact nature of the construction will come into play, leaving little environmental footprint.

Al Mulla speaks from the site where the dream is taking shape. With the distinctive skyscrapers of Doha in the background, cranes and diggers work ceaselessly to make his vision a reality. Because much of the design is pre-built, it will spring upwards in double-quick time. As he surveys the works, Al Mulla is aware that he is delivering a blueprint for others to follow in the future.

'We are pushing the boundaries of design,' he says. 'Using large scale recycled material for a reusable modular structure is a huge architectural advance. It is very exciting.'

The stadium will host World Cup matches up to the quarter final. Al Mulla says: 'The moment I'm really waiting for is when the first match is played here, seeing all the people from Qatar and abroad coming towards the stadium.'

'Then when it is dismantled, being used elsewhere, it will remind me of all the great team work, and will bring back all the good memories.'

He says: 'It is an honour to work on a visionary project like this. It is the first of a kind. It is legacy-driven thinking, and it will set a basis for coming generations on how to optimise and come up with sustainable solutions, not only for sporting venues, but also on other construction projects, great and small. It will influence the way humans build in the future. That is a source of great pride.'

2022 IN NUMBERS

The 1st Arab World Cup

55km
the longest distance between stadiums

4 YEARS TO GO

8 stadiums currently under construction

1 HOUR

the maximum travelling time between stadiums

170,000

modular seats

to be donated post-tournament to countries lacking football infrastructure

16,000

trees potted to fill new green spaces around the stadiums

Scheduled to take place from

21 November to

18 December 2022

Prime-time viewing for over

3 billion

football fans worldwide

Afraa Al Noaimi

Generation Amazing: Getting the ball rolling on social change

How can football positively impact the lives of one million young people in the next four years? Acting Executive Director Afraa Al Noaimi explains

The name says it all. Generation Amazing uses the power of football as a catalyst for social change to educate and empower the next generations in Qatar, the wider Middle East and Asia.

Inspired by the 2022 FIFA World Cup, the programme uses football for development training to enhance the skillsets of young people, and create leaders who can make a difference in their communities. It aims to spread the World Cup effect further afield than the eight magnificent stadiums currently being built in Doha, constructing pitches for communities globally.

Afraa Al Noaimi, Generation Amazing Acting Executive Director, says: 'We are working with school children and workers in Qatar, as well as youth in countries across the Middle East and Asia. We build infrastructure while at the same time training coaches to make it a sustainable programme within each community.'

Having begun in 2010, the programme aims to leave a legacy beyond the excitement of the World Cup. Al Noaimi adds: 'We aim to transform a million lives through football outreach and education by 2022.

This includes our beneficiaries of the programme in Qatar, as well as young people in the other countries we operate in Nepal, Pakistan, Jordan, Lebanon, the Philippines and India. Targeting vulnerable and displaced people, we empower a new generation of young leaders to transform their communities through sport.'

The project is important both for young people and migrant workers. She adds: 'This is the first programme in the world which uses football to enhance the lives of workers both in Qatar and in their communities in Asia, giving back to those building our country. It fits perfectly with Qatar's long-term vision to leave a lasting

| *Xavi Hernández, Generation Amazing ambassador*

"We aim to transform a million lives through football outreach and education by 2022."

social, human and economic legacy from hosting the tournament, tangibly improving lives across our region and continent through the power of football.'

Recently, Generation Amazing ambassadors helped to support the disaster relief efforts in Kerala, India, after the area was devastated by severe flooding. Al Noaimi says: 'That was a proud moment for me, as it showcased how far we have come with the programme, and the potential we have to achieve further significant results as we work together with our ambassadors and partners. We have just recently celebrated the significant milestone of reaching over a quarter of a million beneficiaries across the world, which puts us well on the way to achieving our ambition of positively impacting the lives of one million young people by 2022.'

| Qatar National Library exterior

Mohamad Y Al Sulaiti

Conserving wildlife in the Arabian Gulf

Mohamad Y Al Sulaiti PhD, Research Director at ExxonMobil Research Qatar, explains the objectives of the programme and talks about what makes dugongs such fascinating creatures

What is significant about the dugong population in Qatar?

Qatari dugongs are part of a larger group found in the Arabian Gulf – which we think is around 6,000 to 7,000 individuals – and the second largest group in the world, second only to Australia. The largest aggregation of dugongs ever recorded was of the Qatari dugong – more than 670 animals. As recently as one hundred years ago in the Gulf, dugongs were hunted and used for food, leather, and as a source of oil.

Why and when was the programme created?

Dugongs are listed by the International Union for Conservation of Nature (IUCN) as "vulnerable". We realised that there was a need to develop a better understanding of Qatar's dugong population and how we could help protect it. So in 2014, an agreement was signed between ExxonMobil Research Qatar (EMRQ), Texas A&M University and Qatar University (QU). A great deal of our initial work has focused on examining stranded specimens, giving us information on the demographics of the population in Qatari waters.

What are the objectives of the research on Qatar's dugong population?

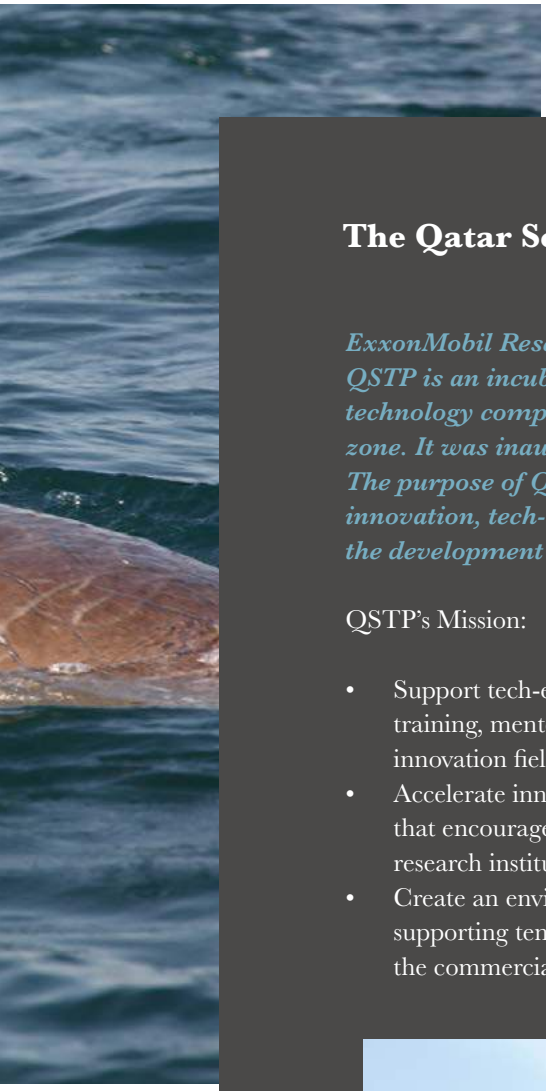
The dugong is a fascinating species and we want to try our best to understand and protect it now and for generations to come. Dugongs help maintain healthy seagrass meadows, which are important fish nurseries, and food source for sea turtles. They help ensure vegetative balance and a healthy ecosystem. They also add to the marine biodiversity of the region. They are facing a high risk of extinction – so I would say that we have three main objectives: to learn more about Qatar's dugong population; to educate Qataris and those living in Qatar that these animals exist in our waters and are important to the ecosystem; and to ensure their long-term protection.

| *A dugong comes to the surface of the sea to breathe*

ExxonMobil Research Qatar, in collaboration with Texas A&M University at Galveston and with support from Qatar's Ministry of Municipality and Environment, is working on a major programme to study the conservation of Qatar's dugong population.

Since the inception of the project, have there been any significant findings?

We actually made an alarming discovery when we started fieldwork – a significant number of dugongs were dying and stranding on Qatar's beaches. Fishing nets or ropes impacted some of these animals – sadly, they became entangled in them and drowned. So we hope to protect them from these dangers.



The Qatar Science & Technology Park (QSTP)

ExxonMobil Research Qatar is based in Qatar Science & Technology Park. QSTP is an incubator of start-up technology businesses and a hub for technology companies in Qatar, and is also the country's first free-trade zone. It was inaugurated in March 2009 as part of Qatar Foundation (QF). The purpose of QSTP is to be an international hub for science and technology innovation, tech-based entrepreneurship and high-tech businesses, and spur the development of Qatar's knowledge economy.

QSTP's Mission:

- Support tech-entrepreneurship ventures in Qatar through incubation, funding, training, mentorship, and connection to the wider regional and global tech innovation field.
- Accelerate innovation within the private sector thanks to programmes and grants that encourage new product development, innovation and collaboration with QF's research institutes.
- Create an environment ripe for innovation and collaboration by attracting and supporting tenants focused on development of tech-based products and services and the commercialisation of scientific research.

2

Entrepreneurship

Qatar's economy continues to grow and has proven itself one of the strongest economies in the region, and a serious global player, despite many challenges.

Qatar's entrepreneurs are playing an ever-increasing role in this growth.

This chapter demonstrates how Qatar equips and empowers its people to foster innovation and work towards developing a diversified knowledge-based economy, in line with its National Vision 2030.

We open the space for everyone, whether they are technology experts or not. You can come here and develop your ideas, using different techniques and machines. You can prototype something and move to the next stage of innovation. We are working closely with entrepreneurs, private companies, and students alike.

Robert Garita, Fab Lab Manager

Duha Albuhendi

Nurturing tomorrow's digital trailblazers from idea to success

Qatar's Digital Incubation Centre supports startups to help them grow and innovate in Qatar

"Most of the startups join DIC with only an idea. We take them through a series of trainings and hand-holding support until they become mature businesses. "

The Digital Incubation Centre (DIC) turns dreams into reality. Ask what they actually produce, and the answer will be innovation and success. Set up in 2011, the Digital Incubation Centre aims to support young entrepreneurs to transform their ideas into viable businesses.

They nurture the creation of new innovative digital startups in Qatar, helping young people learn essential business and commercialisation skills and develop their innovations.

Duha Albuhendi, DIC Manager, says: 'We provide an array of targeted resources and services to entrepreneurs within the Digital Space, in order to accelerate the successful development of startups and fledgling companies.

'By offering expertise, professional guidance, and services – including access to workspaces, business planning,

| The DIC in action

training and mentorship, and legal counselling – we help innovators with emerging technologies to succeed.'

Other services include networking and participation in local and international events, and access to a network of partners and business contacts. There is also access to investment forums and angel investors, free office space and shared facilities.

DIC offers its array of services for free to all of its incubated startups, helping contribute to the rapid growth of Qatar's thriving digital economy. It currently offers four programmes for start-ups. There is the Ideacamp, a five-week programme for entrepreneurs, technologists, developers and designers who have a great idea for a technology solution.

Participants take part in a series of workshops, training and mentorship to help them develop a business model, build a prototype and test their idea with customers, with the support of industry mentors and DIC staff. By the end of the programme, participants will pitch to join the DIC Startup Track to take the idea to the next level.

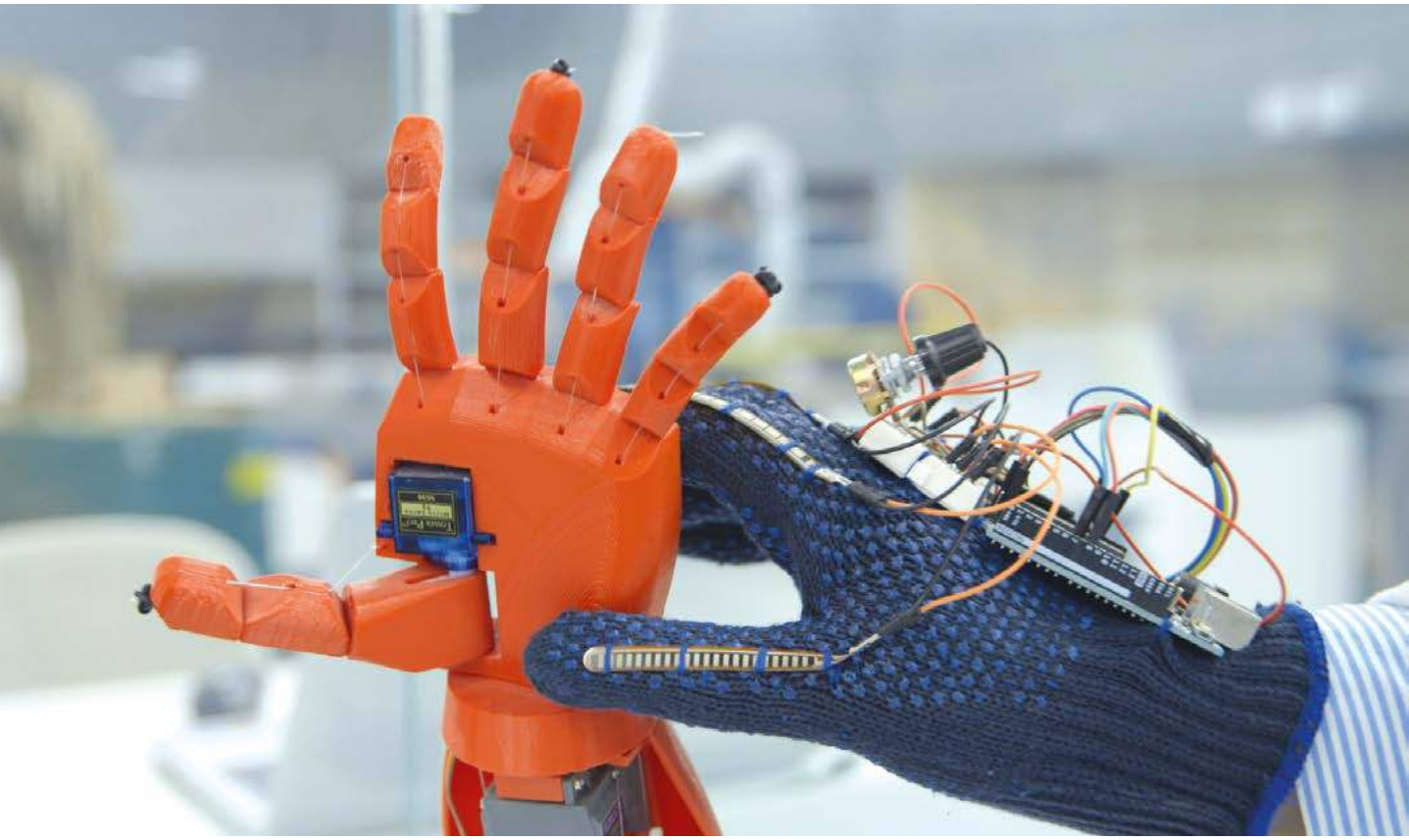
Then there is the 'launch' stage and 'growth' stage of Startup Track – each taking a year. The first year is structured around a set of milestones taking a startup from prototype to registered business in Qatar.

The second year is focused on growing the business. Startups with a business already launched can join the Growth Stage Program.

Additionally, there is the co-working space; startups and entrepreneurs with an idea for a technology business can use this space in preparation for joining one of the DIC Incubation Programs.

Albuhendi says: 'Most of the startups join DIC with only an idea. We take them through a series of trainings and hand-holding support until they become mature businesses. Some examples of those startups who have joined as an idea and have now reached the growth stage include E-emdad, Applab, Wash Now, Magaza, FiTech, Urban Point and Meeddy. Some of these have graduated from DIC, others are about to do so.

'As of today, DIC has supported 178 teams of entrepreneurs. Some 75 of them have reached the startup stage. Many of our startups have been successful in raising funds from local investors and international VCs and expanding to other markets besides Qatar. We are immensely proud of the successes our businesses have achieved.'



#Trailblazers: Robert Garita and Nayef Al Ibrahim

Fab Lab: Innovation in action

Q Magazine uncovers how Qatar, now more than ever, is the place to innovate, create and cultivate new ideas

Fab Lab (short for Digital Fabrication Laboratory) turns ideas into reality using cutting-edge technology and shared knowledge.

Fab Lab aims to spread awareness about the growing local capabilities available in Qatar through prototyping using 3D printing and other new technologies.

At the heart of this future-looking venture is a small-scale workshop which provides a supportive environment for creativity and aims to enable everyone, from young people to seasoned entrepreneurs, to advance their ideas and turn them into projects. Fab Lab provides the latest tools, equipment, and manual and digital manufacturing devices, helping reduce the costs of invention.

"We equip and empower the young generation with a new skill-set to foster innovation and their ability to make things."

- Nayef Al Ibrahim

It is innovation in action. 'We open the space for everyone, whether they are technology experts or not,' says Robert Garita, Fab Lab Manager. 'You can come here and develop your ideas, using different techniques and machines. You can prototype something and move to the next stage of innovation. We are working closely with entrepreneurs, private companies, and students alike.'

He explains: 'If you have an idea and you want to get it to market, you have to first prototype it. Then you can go to the market, validate your idea, and turn this into a business.'

He shows an example of a prototype of jewellery, holding up an eye-catching Arabic ring to catch the light. Its fine detail and intricate design looks as if it were the product of a traditional artisan, and yet it has been made by a 3D printer at Fab Lab from resin.

Designers came to Fab Lab with an idea for the ring, which they needed to refine. 'We took the 3D model,

| *Fab Lab in action*

and then printed it, first using plastic, and then using resin,' says Garita, a Costa Rican architect specialising in digital fabrication and social innovation. 'The designer was able to then discuss this with the client and customise the product, before beginning mass production. In this case they are going to cast it in gold, so they have to get the design right at the outset.'

Now with Fab Lab you can be a 'pro-sumer' – a producer and consumer combined. He says: 'This is changing the economy. We need spaces where you can prototype an idea, get more precise information and fine-tune the design, and then bring this to on-demand production.

'Fab Lab is a call to action that turns us from the consumers of technology, through gaming and phones, to applying technology to turn us into producers. It is the fourth industrial revolution at work.'

This will result in more environmentally-friendly manufacturing, he believes. 'You are making something for your needs, not taking something from the market that is pushing you to consume. Technology is just a tool, not the final goal – it will allow us to make customised products that will change the way we consume.'

The beauty of the Fab Lab concept is about more than technology, he says. 'When you have a collaborative

space, people from different backgrounds, where you can work with biologists, engineers, designers in the same place, that is a huge change.

'If technology is not open to the people, there is no social innovation. What I love about Fab Lab is that it gives people the opportunity to play with the machines, learn from others, and produce something unique.'

He adds: 'Qatar is a wonderful environment for innovation because it brings so many experts from different fields together. Fab Lab will allow the nation to produce what it needs.'

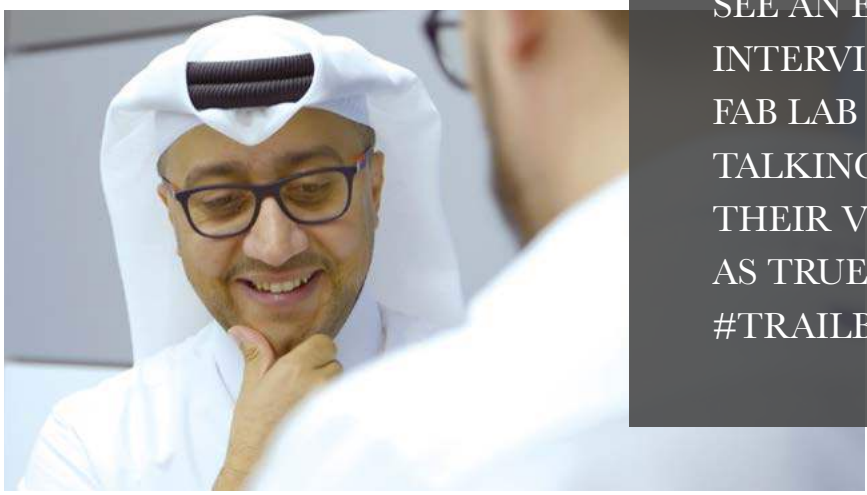
Fab Lab is part of a network of 1,500 around the world, providing a global community for inventors.

QBIC Fab Lab: funded by Qatar Development Bank and managed by Qatar Business Incubation Centre's incubated startup, ibTECHar Digital Solutions, is the first incubator-based fabrication laboratory in Qatar. QBIC Fab Lab is a small-scale workshop that provides entrepreneurs and inventors with a wide range of state-of-the-art computer-controlled tools and programmes that help them digitally fabricate products and prototypes.

Nayef Al Ibrahim, ibTECHar founder and a civil engineer, says: 'We provide integrated, solutions-focused education. We bring content, technology and people, and we operate spaces. ibTECHar in Arabic means innovation – to be innovative. We believe technology empowers human beings.'

He has a clear vision: 'We equip and empower the young generation with a new skill-set to foster innovation and their ability to make things. In the long term, we believe this will contribute to our growing diversified economy. Qatar is blessed with the resources we need, so we have a unique and huge opportunity. This is an exciting time to be a young person in Qatar.'

GARITA AND AL IBRAHIM'S STORY EXTENDS FAR BEYOND THESE PAGES. GO ONLINE TO **QLIFE.COM** TO SEE AN EXCLUSIVE INTERVIEW WITH THE FAB LAB INNOVATORS TALKING ABOUT THEIR VISION AS TRUE QATARI #TRAILBLAZERS.



Dr Khalid Al Ali

How 10 seasons of a TV competition resulted in 131 Stars of Science

Stars of Science has become an essential platform for the next generation of innovators in the Middle East

Stars of Science is a TV competition, created by Qatar Foundation and first aired in 2008 to foster innovation in the Middle East. The show follows nine innovators from the Arab world over a 10-week process, where an expert panel of jurors assesses and eliminates candidates until only four finalists remain to compete for USD$ 600,000 in seed funding.

Why is Stars of Science an essential concept in Qatar and the greater Middle East?

Arab youth look up to the Stars of Science alumni who have since gone to establish businesses or become serial innovators, raising over USD$ 14 million in revenues, grants, and crowdfunding to support their business and winning countless awards. They give back to their communities by supporting and mentoring other young people, sparking optimism for a bright future.

How does Stars of Science reflect Qatar's greater aim to inspire younger generations?

The show is bold in its statement that there is no exclusivity on innovation. Anyone can innovate regardless of their origin or circumstances. In the era of nanotechnology, information, and the Internet of Things, achieving your dreams has become easier. Some of the greatest ideas can now be realised using the smallest and cheapest tools.

Why did you become a juror on Stars of Science and what does your role entail?

I have always been on the lookout for platforms that allow me to connect with large swathes of young people across the world, inspiring them to reach their potential. Stars of Science is unique, supporting Arab innovators to develop a prototype for an idea they believe will solve a problem.

The jury has a huge responsibility. Think of us as Sherpas guiding this person who is climbing their own Everest. Those who are worthy to reach the peak usually make it to the top and those who do not usually make it, back down and try again. I've observed life-changing stories.

We have contestants from all over the Arab world, including war-torn countries. For those who are finding it difficult to turn their dream into a reality, we offer a way.

> **"Those who are worthy to reach the peak usually make it to the top and those who do not usually make it, back down and try again. I've observed life-changing stories."**

Is there something people may not know about the role of the juror?

The amount of background research that goes on behind the scenes is incredible. We are looking for people who will inspire a generation and be role models within their communities and countries, so it's as important that they have the right attitude as well as having a strong idea.

How does your background working at NASA and starting your own Silicon Valley company equip you for Stars of Science?

I lived in America for 22 years, 17 of those in Silicon Valley and 10 of which were at NASA, where I worked with some of the brightest minds on Earth. At NASA, I worked on launching two spacecraft and designed and built intelligent robots and drones. This provides a unique vantage point and equips me with the necessary tools to carry out this important role.

Are there any participants who were particularly memorable?

Fouad Maksoud, the winner of season nine. Witnessing his journey from his first pitch as a relatively unknown lab scientist to a true 'Star of Science' who has inspired a generation highlighted the power of the show to me. He developed a 'Nano-shielding Textile Machine' that applies petrochemicals and pharmaceuticals to ordinary textiles. The machine can make clothing waterproof, or integrate healing medicine within the very fibres of bandages. Fouad continues to give regular talks in schools and his innovation has been included in school curricula across Lebanon.

STARS OF SCIENCE IN NUMBERS

131
Stars of Science alumni – representing *18* Arab nations

57%
of alumni *own businesses*

81%
of alumni are between *25* and *34* years old

80%
of alumni stay in touch with each other after leaving the show

19%
of alumni are *female*

60%
of alumni won awards based on *Stars of Science* innovations and applications

80+
billion minutes of content watched on the Stars of Science *YouTube channel*

3

Health

Providing state-of-the-art healthcare is a vital pillar of the Qatar National Vision 2030.

Qatar's health sector has witnessed rapid change in the past few years with the emergence of innovative technology and institutions. Hospitals and research centres have opened across the country to provide forward-thinking solutions to modern day challenges.

Initiatives such as the World Innovation Summit for Health (WISH) and Qatar Creating Vision allow us to share this knowledge beyond our borders, and help communities globally to create a better, healthier life for all.

Qatar is the natural seedbed for a pioneering medical concept, it is ranked top of the list for best healthcare systems in the Arab world and amongst the top 10 globally.

Hesham Elfeshawy, Founder of At-Home-Doc

Sultana Afdhal

Innovating for a healthier world

The CEO of the World Innovation Summit for Health (WISH) aims to make Qatar a hub for healthcare innovation, spreading its knowledge globally through international partners

| *Sultana Afdhal*

What are today's most pressing health challenges?

Non-communicable diseases (NCDs), which are classed as medical conditions or diseases that are not caused by infectious agents, are today's most pressing healthcare challenges. These include diabetes, cancer, and heart disease. With an increasingly aging population globally, the burden of diseases associated with old age such as dementia are increasing for societies and healthcare systems across the world.

How does WISH work to address these challenges?

A majority of these diseases are preventable, with common causes including tobacco use, which leads to cardiovascular disease; poor diets that revolve around high consumption of sugar and fats; and physical inactivity contributing to diabetes. Educating the community to become more health literate, by stopping smoking or reducing salt intake for instance, is key to well-being.

What are WISH's objectives in Qatar?

We aim to continue to influence healthcare policy through our evidenced-based research reports, such as those on dementia, autism, and accountable care, which have all been part of key national health strategies in Qatar.

The World Innovation Summit for Health (WISH) brings together around 2,000 healthcare experts, innovators, entrepreneurs, policymakers, and ministers from over 100 countries. Organised in Doha, Qatar, the Summit provides a platform for this community to collaboratively achieve one goal: a healthier world. WISH also creates and disseminates world-class, evidence-based content and knowledge, and helps build action-driven communities who work together to address today's most pressing global healthcare challenges.

And what are its international objectives?

The vision for WISH is to help make Qatar a beacon for healthcare innovation by bringing together global healthcare experts to share and discuss solutions to healthcare challenges in Qatar. Our summits not only convene expertise to Qatar, but give international delegates the opportunity to learn about the innovation that is flourishing here. We are increasing our footprint on the global stage by finding new partners – for example the Children's National Hospital in Washington, D.C.

How and why is WISH best equipped to lead the global community in medical research and knowledge sharing?

Our team is small and agile, and our network is extensive, so we can rapidly call upon experts from around the world with specific knowledge wherever necessary.

How has Qatar succeeded in creating an environment conducive to innovation in healthcare?

Qatar will thrive in the field of healthcare innovation because there's an appetite for improving health and well-being, whether from communities that benefit from healthcare innovation or healthcare professionals.

| *Her Highness Sheikha Moza bint Nasser, addressing the audience at the World Innovation Summit for Health*

What is your favourite aspect of your job?

Engaging with members of the local community in seemingly simple things. For example, arranging for children with autism to go swimming and horse-riding during the summer period when they have nowhere to go, is incredibly rewarding.

What is your proudest achievement with WISH? Can you explain?

That recommendations from our reports are being used to better shape healthcare policy around the world. I am also proud of the work we've done with international partners, such as the Carter Centre, training journalists on how to ethically report on mental health issues, or the Liverpool FC Foundation, working to train football coaches on how to better include young people with autism in sport.

What would you like to achieve at WISH in the next five years?

"Globally, I'd like for WISH to become a platform that is recognised as the premier healthcare summit to have innovation as a key feature, and for it to become synonymous with open discourse and fresh ideas. Locally, I want WISH to become a trusted research and policy centre that works closely with key stakeholders to shape and influence healthcare."

Sultana Afdhal, CEO of the World Innovation Summit for Health

| *Mohammed Al Jefairi during one of the Stars of Science episodes*

Mohammed Al Jefairi

The SeeDo attitude of a young innovator

Stars of Science inventor Mohammed Al Jefairi talks about his current project to help hearing-impaired children and people with disabilities

How did Stars of Science allow you to grow as an inventor? What did you hope to achieve from being part of the World Innovation Summit for Health (WISH) this year?

Stars of Science is a powerful shortcut for any great idea. It's a path for shifting your invention to the next level. WISH is another shortcut that has a huge potential for providing a great forward shift to an innovation along its journey, and I am looking forward to seeing what we can create.

Can you tell us about your invention SeeDo, the robot that communicates with hearing-impaired children to improve their vocabulary?

This interactive learning technology – or friendly robot named 'Robert SeeDo'- helps children learn sign language, and makes learning fun. Studies show that the early years of a child's life are the most crucial learning period of all. By the age of just six years old, the average child will have picked up 1,000 words in their vocabulary. In that time, a hearing-impaired child will have picked up only 50 words. These children risk getting left behind by society as they struggle to communicate clearly and fully interact with the world around them. I realised technology could bring massive advances for

MOHAMMED AL JEFAIRI

A Qatari innovator and finalist on season nine of Stars of Science – the Arab world's leading scientific 'edutainment' TV show—was chosen to be one of the Innovation Showcases for this year's WISH summit. He attended to showcase his SeeDo robot, designed to communicate with hearing-impaired children, developed under his company Abilitx.

them as they learn. It has been heartwarming seeing the joy on these children's faces as they realise what Robert the robot can do for them.

How does SeeDo operate?

On the outside, SeeDo looks like a fun and friendly character with a large robotic hand that can communicate in all forms of sign language. It can also display all kinds of useful visual content on its inbuilt TV screen. On the inside, SeeDo is engineered with

electronic processors, a motion sensor and specialised depth cameras that can capture and interpret hand movements, so that SeeDo can accurately respond to a child's sign language. That is pretty revolutionary.

Your company, Abilitx, develops groundbreaking technology for people with disabilities. What inspired you to start this company?

I love the opportunities that Stars of Science provides for innovators. I was inspired to do the same but with a focus on helping young inventors and researchers develop projects that relate to and can help those with disabilities. Abilitx is committed to creating a genuinely inclusive society for everyone, with stronger opportunities and better solutions for all people with disabilities. So many established learning and training tools for people with disabilities are not yet taking full advantage of the powerful technology that most of us take for granted. Our mission is to build the world's biggest network for people with disabilities and develop tomorrow's innovative solutions that will transform the lives of people with disabilities.

As a leader in health-based innovation in Qatar, is there any advice you would like to give to younger generations?

We are still at the beginning of our journey. Humanity needs our help and support. We need more researchers, and I invite more people to move into health-based innovation as it has a huge scope for improvement. This is the future.

Ali Abdulla Al Dabbagh

A clear vision to end childhood blindness

One eye test at a time, Qatar Creating Vision works tirelessly to prevent childhood blindness in some of the world's most disadvantaged communities

Preventing childhood blindness is surely one of the most valuable of all goals. Qatar Creating Vision is on a mission to do just that – in some of the world's most disadvantaged communities.

Qatar Creating Vision was established in 2015 thanks to the generosity of the Qatar Fund for Development (QFFD). Led by the international eye care charity Orbis, it aims to deliver 5.6 million eye tests and treatments to children across India and Bangladesh.

There are 473,000 blind children across these countries, with more children affected by blindness in India than anywhere else in the world.

Schoolchildren are tested and given glasses if necessary, so they can see the blackboard. Antibiotics are given for infections, preventing sight loss. And teachers and health workers are trained to spot eye conditions, so they can be treated promptly, even in remote rural settings.

This year, the programme expanded to support the displaced Rohingya people, struggling with sight loss within camps in Bangladesh. The majority of Rohingya people have never had access to eye care.

A specialist centre in Bangladesh now tackles Retinopathy of Prematurity (ROP), an eye condition affecting premature babies.

Ali Abdulla Al Dabbagh, Deputy Director General for Planning at the Qatar Fund for Development, says: 'Qatar Creating Vision programmes run all year round and to date over 3.6 million screenings have been provided to children, and over 45,000 people have been trained on eye health, from ophthalmologists to health workers to religious leaders.

'Around 179,000 spectacles have been prescribed to children and a further 1,100 surgeries have taken place.'

He adds: 'At the heart of the programme is the mission to identify any abnormality in children's vision through timely screening, to prevent childhood blindness, and help break the cycle of emotional trauma, social exclusion, and economic hardship that usually accompanies people who have blindness.'

The programme in Bangladesh has been supported by the Orbis Flying Eye Hospital. From the outside, it seems like a typical passenger plane – but on the inside it is truly unique. It features a state-of-the-art teaching facility, complete with operating room, classroom and recovery room. Over the course of two weeks, 18 Orbis medical volunteers from around the world shared their skills with local eye-care teams.

During the programme, 50 medical professionals were trained and 75 people – including 23 children – were treated.

This year, the programme expanded to support the displaced Rohingya people, struggling with sight loss within camps in Bangladesh. More treatments have been required than expected and most are severe cases, as the majority of Rohingya people have never had access to eye care.

| *Sidra Medicine*

#Trailblazer: Dr Aisha Yousuf

A pioneer of robotic surgery, and a role model for aspiring female doctors

Dr Aisha Yousuf, Director of Reproductive Surgery at Sidra Medicine, talks about the growing role of technology and robotics in medicine

The economic transformation of Qatar in recent years is predominantly seen through an infrastructure-focused lens. While cranes and newly-built skyscrapers dot the landscape of Doha and dominate media conversation, the day-to-day, human impact of such transformation is equally important. Diversification of opportunities has empowered men and women to pursue emerging and rigorous career paths in finance, healthcare and sciences.

A female doctor in Qatar, an exemplar of the nation's investment in human capital, now finds herself at the forefront of the latest revolution in medicine: robotic healthcare.

Dr Aisha Yousuf works at Sidra Medicine, a private hospital for public benefit that provides specialised healthcare for women, children and young people. It delivers comprehensive specialist healthcare services such as cardiology, neurology, urology, and plastic and craniofacial reconstruction for children. Additionally, it offers maternity, gynecology, and feto-maternal services for women.

Chaired by Her Highness Sheikha Moza bint Nasser and established by Qatar Foundation (QF), Sidra Medicine embraces best practice medical education, innovative biomedical and clinical research, and patient and family-focused care.

| Dr Aisha Yousuf

As Director of Reproductive Surgery at Sidra Medicine, Dr Yousuf specialises in robotic and minimally invasive gynecologic surgery. She says: 'Family is at the core of Qatari culture and the very heart of this is women. It is therefore vital that women can have access to groundbreaking and innovative healthcare services.

'Robotic Gynecological Surgery at Sidra Medicine is performed through Da Vinci Robot machines, which gives us doctors better visualisation, through 3D cameras and surgical ergonomics.'

The advantages of using robotic techniques mean that operations have become minimally invasive – with smaller incisions that lead to less post-operative pain and faster recovery. It also means that patients can be discharged sooner due to shorter hospital stays.

The addition of Robotic Gynecology Surgery is part of Sidra Medicine's ambitious plans to set new standards for healthcare in Qatar and the region by leveraging the latest technology, techniques, teaching methods, and attracting leading medical talent, both locally and internationally.

Women are increasingly leading the way in medicine in Qatar, according to Dr Yousuf. She says: 'We are very lucky to have visionaries like Her Highness Sheikha Moza bint Nasser, who have set things in motion for a whole generation of women.' Dr Yousuf was inspired to become a doctor by Her Highness. She explains: 'I had the privilege of meeting Her Highness at my high school for a special event that was hosted for high achievers. I was inspired by Her Highness's vision for QF and Education City, and that led me on the path to consider medicine as a career choice. I was one of the first students to graduate from Weill Cornell Medicine-Qatar and went on to the University of Michigan Hospital, where I completed my specialization in Obstetrics and Gynecology.

'Following that I went to the University of Toronto, St. Michael's Hospital in Canada, and completed a sub-specialty fellowship program in minimally invasive and robotic surgery, under the sponsorship of Sidra Medicine.

'I consider myself as an example of the education vision for Qatar, particularly as part of QF. I see my journey from student to an employee as one that came full circle, as I graduated from an QF partner university, and then after completion of my training abroad, I went back to work at Sidra Medicine.'

Now, she is glad to see others following in her footsteps. She says: 'It is very encouraging to see more women entering the field of medicine and research in Qatar.

'With a female Public Health Minister, Her Excellency Dr Hanan Mohamed Al-Kuwari, at the helm of advancing healthcare, there is no better time for us to be in healthcare.

'I find it motivating when I see more Qatari female colleagues joining our diverse teams and me in the operating rooms, as we continue to save and change lives.'

"I consider myself as an example of the education vision for Qatar, particularly as part of QF. I see my journey from student to an employee as one that came full circle, as I graduated from an QF partner university, and then after completion of my training abroad, I went back to work at Sidra Medicine."

QATARI APPS

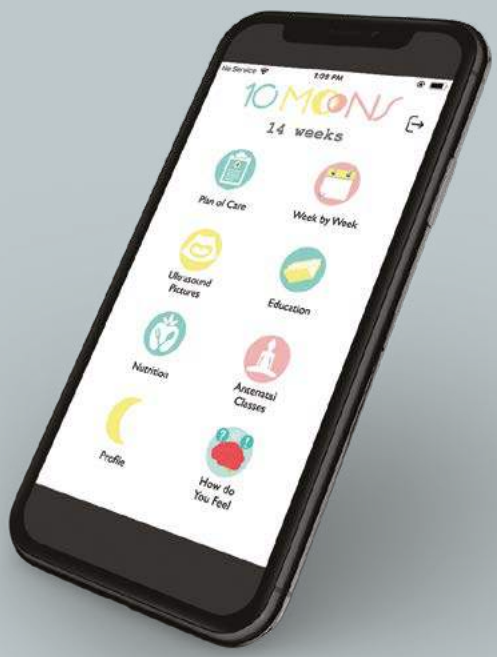
that could change your life...

10 MOONS

MATERNITY MOBILE APPLICATION

In September 2018, Sidra launched Qatar's first maternity mobile application based on the lunar calendar duration of a pregnancy

- Helps expectant mothers track their pregnancy journey
- Provides step-by-step guidance about foetal development, nutrition advice, and information related to their care at Sidra Medicine
- Can be accessed in English & Arabic



DROOBI HEALTH

A DIGITAL HEALTH SOLUTION

By integrating technology, healthcare specialists, data science and behavioural sciences, Droobi Health Technology was created with the aim to help people with diabetes manage their disease more effectively

- Droobi Health empowers patients with chronic diseases to change habits, improve health conditions and reduce the risk of complications through digital behavioural change interventions
- The app keeps the user engaged with vibrant weekly lessons, tips on how to modify their food and exercise habits, along with advice and support from Droobi's health coaches.
- Can be accessed in English & Arabic

Hesham Elfeshawy

At-Home-Doc: Medical attention at the tap of a button

With the support of QBIC, At-Home-Doc is part of a global revolution that is expanding and securing access to healthcare

It used to be that a doctor would visit patients at home, paying attention to their ailments and giving them all the time they needed. Now, after decades of time-constrained care at healthcare clinics, we have come full circle.

Thanks to new technology, At-Home-Doc is providing medical attention at the tap of a button.

A new generation of Qataris are being treated in the comfort of their own homes, without long queues or crowded waiting rooms.

Founder Hesham Elfeshawy explains: 'At-Home-Doc is a mobile app, web page and toll-free number that brings doctors and much more to your home. At the push of a button, you can choose the medical service you need, be it a home-visiting doctor, nurse, physiotherapist, wellness coach or more. Not only that, we deliver medication and arrange laboratory home services.'

'Qatar is the natural seedbed for a pioneering medical concept,' he says, 'it is ranked top of the list for best healthcare systems in the Arab world and amongst the top 10 globally.

'Best healthcare outcomes have always been a top priority in Qatar. But convenience is also important. Imagine your child gets a high fever in the middle of the night, what would you rather do? Pick up your car keys and drive to the nearest hospital and wait with other sick people, or talk directly to a doctor on the phone?

'This is all about creating an alternative pathway that offers accessibility and affordability to quality healthcare. When we are sick, we feel we should be the centre of attention, and with At-Home-Doc, that is exactly what happens.'

At the same time, this service reduces the pressure on A&E centres – where at times 80% of those presenting themselves are not emergencies.

At-Home-Doc has seen over 13,000 patients since it was founded in 2017. It is often paid for by insurance companies, and provides free follow-up calls and visits.

"This is all about creating an alternative pathway that offers accessibility and affordability to quality healthcare. When we are sick, we feel we should be the centre of attention, and with At-Home-Doc, that is exactly what happens."

Initial calls are passed to a triage nurse to be assessed for urgency.

Over time, Elfeshawy believes the service will reduce state healthcare costs. 'Catch a USD$ 10 problem in time, and it won't turn into a USD$ 100 treatment plan,' he says.

The company has been supported by the Qatar Business Incubation Centre (QBIC), and is growing 21% month on month, with a Net Promoter Score higher than Amazon's.

At-Home-Doc has already found some novel applications. A shipping company with vessels passing through the Gulf has called on At-Home-Doc at sea, because its staff members did not have visa requirements to easily come on shore.

Elfeshawy, who co-founded the company with his doctor twin brother says: 'That was an interesting project, we had to go out by boat and examine people in the middle of nowhere. Crew members were sick, but we were able to give them the right treatment quickly and in comfort.

'Cruise liners also contact us with the same type of requests. We are happy to provide a very versatile service.'

There are other pressing needs. Around half of the world's population has no direct access to a doctor, so At-Home-Doc could revolutionise healthcare in these areas, saving lives.

Recently, At-Home-Doc had an online live chat with a man in Africa, whose young son had fallen and hit his head. The doctor was able to give the right advice, so that the child was treated effectively.

Elfeshawy says: 'It's like reinventing the wheel. Doctors used to visit people in their homes, and that changed. But often a clinical setting is not required. Telemedicine offers huge and potentially really important changes. The value of telemedicine is boundless.'

About the Government Communications Office

The Government Communications Office (GCO) was established in June 2015 to effectively communicate the priorities of the Government of the State of Qatar.

The GCO works with Qatar's ministries and embassies across the world to tell the country's story and showcase its vision for the future.

The GCO falls under the jurisdiction of His Excellency Sheikh Abdullah bin Nasser bin Khalifa Al Thani, Prime Minister and Minister of the Interior.

His Excellency Sheikh Saif bin Ahmed Al Thani is Director of the GCO, and is the first point of contact for those looking to learn more about the State of Qatar.

The GCO is committed to transparent engagement with the international community as Qatar continues on its journey of development.

As part of its work, the GCO publishes *Q Magazine* twice a year. Its purpose is to educate a global audience about the State of Qatar, and highlight the country's achievements and initiatives in various fields – locally and internationally.

To find out the latest news from the GCO, please visit our website www.gco.gov.qa.

دولة قطر
State of Qatar

مكتب الإتصال الحكومي
Government Communications Office

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Sidra | At-Home-Doc

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