

APM Award Application 2019 Social Project of the Year



Al Karamah School - Abu Dhabi UAE

A safe, secure and engaging learning environment for Emirate children with autism.

Abu Dhabi

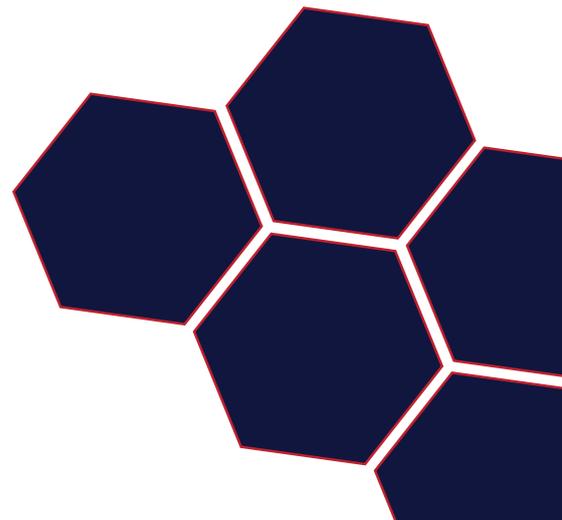
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1.0 Results and Benefits

Al Karamah School in Abu Dhabi (UAE) is the first school in the United Arab Emirates for pupils with special educational needs (SEN). The school focuses on pupils with moderate to severe Autistic Spectrum Conditions (ASC), creating a safe, inclusive environment. A full curriculum is taught from nursery onwards for up to 260 Emirati children with autism.

Young people with autism can find learning challenging, and the project creates a warm environment, supporting the teachers to deliver the necessary care for a young person with ASC in all areas of their development.

Children with autism can become anxious especially when faced with small changes in routine or stress from the challenges of learning. It was vital to provide spaces where children can seek security and calm within a safe environment. The project established a narrative across the site with clearly defined journeys to respond to different pupil needs. The 'journeys' were articulated in many ways that allowed flexibility for both staff and the pupils, responding to the diverse and changing needs of young people with autism. The nature of inclusion was also aimed at providing spaces where parents can meet and engage with each other, establishing a support system.

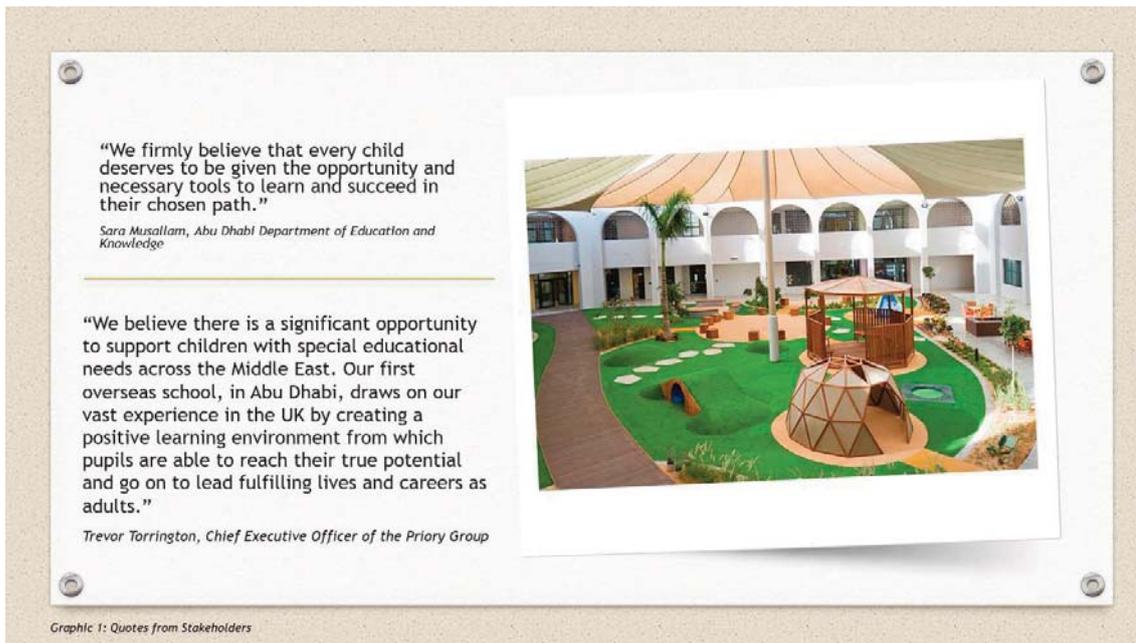
This project is the first institution dedicated to serving local pupils with ASC, enhancing the educational landscape and social care system within the UAE. The Client (Abu Dhabi Department of Education and Knowledge - ADEK) had a clear vision and aspiration of what and how they wished to achieve a landmark project that would begin to satisfy a significant need for the Emirati Community.

ADEK subsequently identified a school facility, vacated due to new school campus developments. They established a partnership with an experienced operator (Priory Group from the UK) and engaged an experienced project team who were driven forward by the ambition of ADEK to design and deliver this major refurbishment in the timeline challenge of 4½ months.

For the project team the implementation of creative design to establish and facilitate easy navigation of the school building was critical. Teaching hubs, arranged in year group clusters, present a clear progression through the school over each pupil's educational career. Specialist teaching clusters are designed to be adaptable to suit the needs of the young people throughout all stages of their education.

The central courtyard is the 'heart' of the school which was transformed into a landscape oasis. As for all children, interaction, sensory, play and fitness are essential for development. The architect focussed on providing stimulating natural surroundings with a soft colour palette and smells for exploration. Playground equipment was embedded into the landscape, allowing young people to develop their motor skills.

The local community also benefits from the school. Situated in a school district in downtown Abu Dhabi, the design is friendly and welcoming in its appearance, creating a warm and inclusive presence. Surrounded by monochromatic coloured schools, Al Karamah has added elements of soft colour to its external facades and softened its outer landscape with artificial grass and coloured play equipment.



While designed for enhancing the educational offering to pupils within the school, the design has fundamentally pushed play and learning activities out and around the perimeter of the building rather than sheltering pupils inside or at the back of the site. This signals openness and transparency.

Located in the heart of a residential community, the landscape has been broken up from its previous ‘barren desert’ appearance and activated. This is a key aspect of breaking down social barriers with perceptions of people with special educational needs.

It was rewarding to see how all team members, including the operator, designer, project manager and the selected contractor worked together to meet the tight deadlines for the sake of the wider community. Hurdles were overcome as all stakeholders shared a common vision; to complete the project on time to create a critical enhancement to the education sector in the UAE.

Everybody involved brought a massive amount of motivation and enthusiasm into this project, and together the impossible was achieved; the project was conceived in July 2018, works commenced in September 2018 and the school opened its doors to the students in January 2019.

2.0 Project Management

2.1. Context

The school is located in Abu Dhabi, in the United Arab Emirates. The existing government school building is surrounded by a variety of other schools, thus forming an academic zone in the heart of downtown Abu Dhabi.

The school building was refurbished to provide a safe, secure and engaging learning environment for children with ASC. This includes specially designed classroom 'hubs', therapy rooms, a multi-purpose hall and dining space as well as a large oasis-style garden in the courtyard.

The building comprises 2 floors and a total of 86,000 SQ FT building area.

The whole procurement process required condensing as time was critical, however market testing and auditability were core principles. PMKConsult established the basis of design with the designer (HLM Architects) and worked with a shortlist of eligible design and build contractors to establish a Contract with McLaren International LLC in just 10 weeks.

2.2. Capability

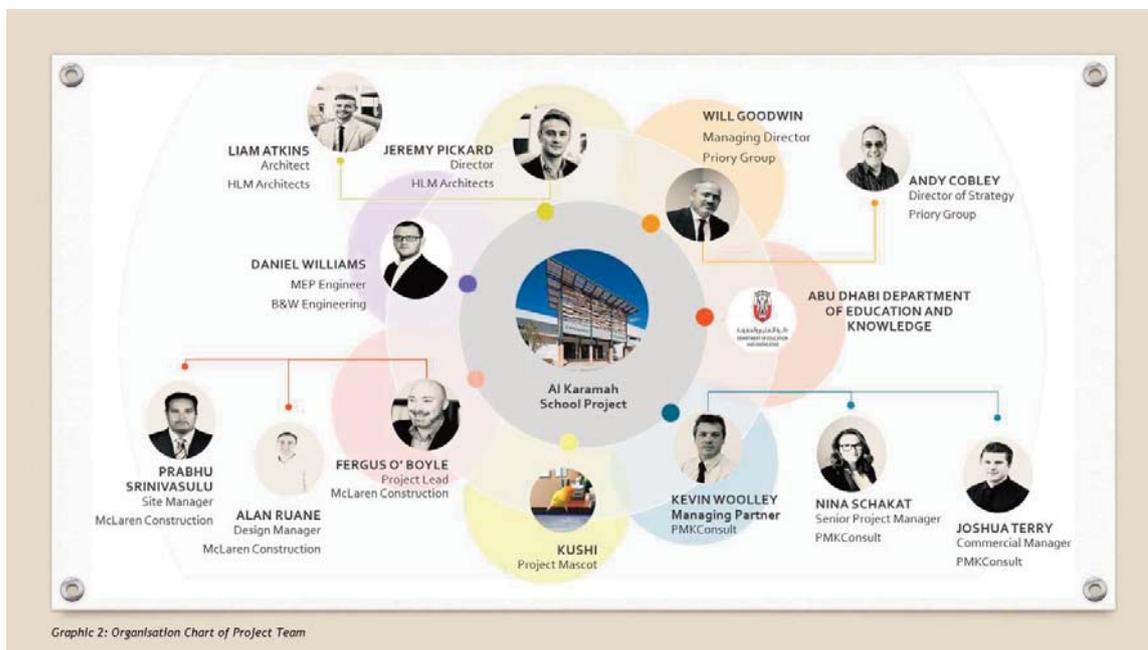
ADEK is the statutory authority responsible for the education of Emirati children in Abu Dhabi. They provided funding for this project as the building owner.

As operator Priory Education and Children's Services (PECS), are responsible for assessing children, employing the teachers and administrative employees and to manage the day to day operation. PECS also took responsibility to oversee the alterations of the building, sharing their knowhow on how to best use the available space within the school.

PECS appointed a team who supported them with their goal to transform the building into a unique learning environment for young people. HLM Architects established a concept design alongside B&W Engineering who prepared the working improvement specifications for the MEP equipment.

PMKConsult was appointed as the PMC Consultant to determine and implement the needs of PECS. PMKConsult led the project from its conception to completion, including planning and managing of people, resources and commercial controls needed to deliver the project.

McLaren was procured by means of a lump sum design and build form of procurement, utilising a “Provisional Sum” for the MEP Scope of Works. The early



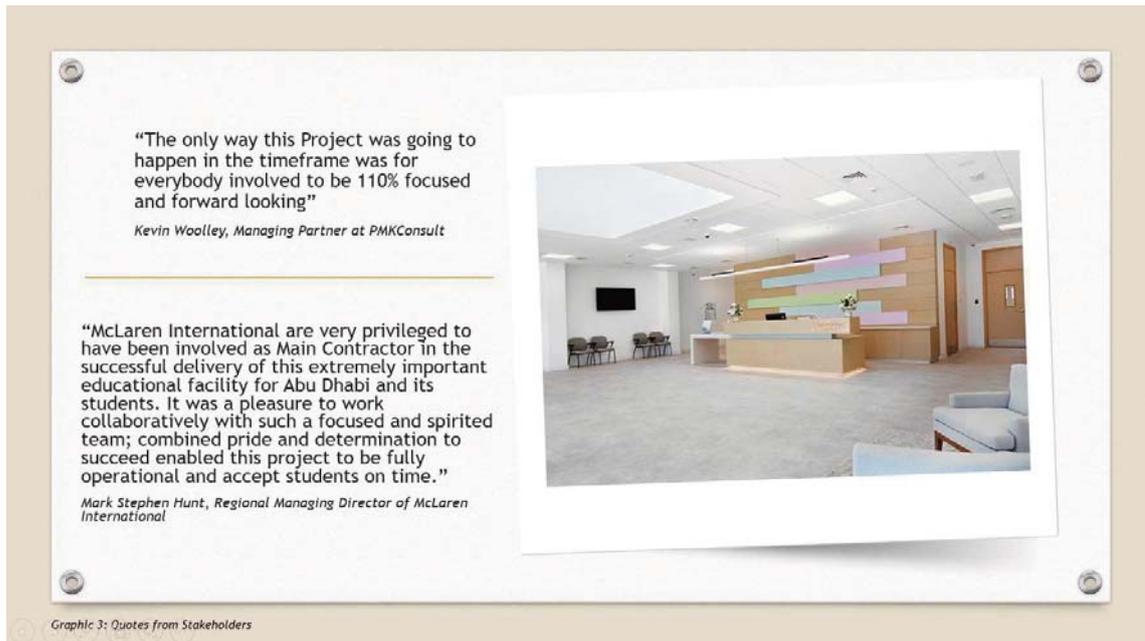
survey work and technical design was then used to procure the MEP works in an open book approach.

McLaren took the concept design through to the working drawing level and from the schematic design onwards, HLM Architects and B&W Engineering acted as sub-consultants to McLaren.

2.3. Delivery

PMKConsult worked to deliver a positive outcome through the application of professional excellence and the application of strong project management principals. PMKConsult were inspired by the vision and shared values of the client team and strived to make a difference to their Clients’ outcome.

Tools such as project execution plans, risk registers and timely reporting allowed PMKConsult to manage, closely monitor and track progress, methodically implementing time and risk mitigation strategies. With a constrained timeline it was essential to adapt and speed up processes as and when required.



This was only possible through strong team collaboration and diligent tracking of all activities.

This process was adopted throughout the entire project team, from ADEK and the consultants through to the McLaren team. Uniquely PMKConsult also adopted this strict governance with the suppliers and sub-contractors of McLaren.

By opening channels of communication right down to the suppliers, PMKConsult ensured that the local supply chain was completely aligned with the wider project and social objectives. Early identification of risk within the supply chain was a critical element of this project.

The project had a challenging duration of only 17 weeks from site mobilisation to fully operational status for teachers and pupils. Early access was also facilitated after week 15 to allow client procured furniture installation and teacher training to be undertaken.

Close co-ordination of design and selection of materials was critical to ensure the design brief was maintained with materials that could be procured on time. Procurement was managed daily from order to production to shipping and delivery on site to reduce risk of delay.

Client changes were managed to allow flexibility as the scheme developed. This resulted in 64 client driven variations which were accommodated within budget. This was achieved by ongoing value engineering and all was completed within the original time for completion and to the tight budget constraints.

Health and Safety at the site was paramount, with 24 hour working and a peak workforce of 500 operatives across many trades. The team are extremely proud in a record of no lost time accidents over some 750,000-man hours of work.

All companies involved worked as a team, delivering a first-class facility that the client is delighted with; and that serves as a game changer for the education sector in the UAE.

2.4. Interfaces

PMKConsult faced challenging interfaces and had to effectively manage a number of different stakeholders, Statutory Authorities and suppliers.

As it was an older school building, the electrical and fire life safety systems were non-compliant with local authority needs. The team had to overcome many obstacles to engineer a fully functioning, compliant school.

The old existing structure had undergone some modifications previously. Extensive structural investigations were carried out to ensure the existing structure was sound and new build elements would not impact the stability of the building. A programme of enhancement to its fire proofing and acoustic strategy to bring it up to current code compliance was also required.

All elements were resolved through a strict process of communication, together with an open approach to information sharing. Where site conditions dictated further investigatory works PMKConsult assisted the delivery team in phasing of the works in order to maintain the critical programme. In several locations this meant slight redesign of the layout, delivered with no cost or time impact.

The team faced delivery issues with the local supply chain throughout that required immediate attention. It was apparent that the local market would be unable to delivery certain materials in the necessary timeframes and so PMKConsult proactively sought to support McLaren.

PMKConsult instigated an independent review and management process with direct interface with the supply chain, including factory visits. This not only

enforced the critical nature of the project to the complete supply chain but also allowed for an independent assessment of the risks involved. McLaren delivery and leadership teams could then focus on the physical delivery of the school.

This enabled the project team to identify, manage and effectively mitigate risks in this area, all of which could have caused a delay to the opening of the school.

A heart-warming interface is also a lovebird that decided to make the construction site her home. Named Kushi as she made all team members happy (Kushi = Happy in Hindi language), she became an integral part of the entire team as she became a symbol of the common goal and desire of the whole team and is now embedded into the school as the school mascot.

The success of this project was built on successful interfaces and PMKConsult believe that this innovative, partnership approach was one of the key success actors in the entire project.

3.0 Innovation and Lessons Learned

The team looked at the effectiveness and efficiency of the project delivery process. The Lessons Learned Report PMKConsult prepared focussed on improvements for future projects.

The report identifies:

- Some lack of co-ordination that could have been avoided
- Successful management strategies that can be adopted in future projects
- Procedures and resources that could have been improved

The report also includes an overall assessment of the project. Assessments looked at were both, qualitative (based on research, interviews and workshops) and quantitative (such as key performance indicators or benchmark assessments).

We looked at all information such as:

- Cost vs. budget
- Project progress relative to milestones
- Number of complaints/ incidents/ accidents
- Number of working hours spent on different aspects of the works
- Number of variations

Further aspects of the report include:

- Health and Safety
- Technical & Quality issues
- Effectiveness of the communication
- Collaborative practices

3.1. Lessons Learned

Every project provides an opportunity to learn, and these lessons will often change with the circumstances that are faced. With this project, challenges that had to be micro-managed related primarily to achievement of the tight time frame.

The main lessons learned here are;

✓ **Be Responsive**

At the commencement of the construction we needed to be aware of all the information being passed around to all stakeholders. Timely issue of requests for information and submissions, responding, and returning them as promptly as possible to keep the project moving was key.

Strong recording of events is essential and issues (commercial, contractual or programme) were discussed and resolved daily. If more time was required, we kept the contractor updated and ask them for any additional information that we needed from the site. We let everyone know that we were working through the issue(s) and once we had a definitive response, we shared it with the team.

✓ **Take responsibility for errors and omissions**

Probably the hardest part on a construction project for most team members. Whenever an issue arises, we must take responsibility, resolve the issue, and keep the project moving forward. Accusation in an attempt to protect ourselves ultimately wastes time, energy, and straining relationships. It was essential to work as a team and not to look for guilty parties. This was a positive lesson learned and was part of the success of this project.

✓ **Know your Documents**

The ability to quickly recall information from our project/ contract documents and quickly find the relevant information was critical. Whenever an issue was brought up by a stakeholder, we had to know the detail and understand the issue. If we didn't have an answer, it was okay to let the stakeholder know that we'll get back to them when we have a definitive response. It was also important that we, as the Project Manager, knew all the documents issued by all parties in order to support one another throughout the project.

3.2. Managing Innovation

A critical element of this project was utilising an innovative approach to the procurement and communications.

This was achieved by ensuring project team members were empowered to make decisions, and being able to act on them in a confident and effective manner.

The team can only do this if they are fully informed of the wider project goals, not just those associated with their element of the project.

Throughout the project the whole team were 100% aligned with the deliverables of the project as a whole. HLM were aligned with the procurement issues and therefore were able to adapt their design according to local conditions. The contractor was 100% aligned with the requirements of an autistic school and PMKConsult were aligned with the procurement issues and supply chain.

Managing innovation is only possible after identification, and PMKConsult held twice weekly meetings with the whole team specifically to address what ideas could be identified to improve the delivery of the school. These sessions specifically focused on 'out of the box' thinking associated with all elements of the project and were critical to planning and execution.

Critical to the success of the project was a very flat hierarchy to the project team. PMKConsult ensured that every member of the wider team was engaged in this process, right through the supply chain and sub-contract workforce.

3.3 Challenges overcome

The successful completion of this project was around the effective management of risk, utilising a very creative and an innovative approach to many aspects of the project.

The programme was extremely tight and so a creative approach to contractor engagement was adopted. The first stage of the tender had to be undertaken very much based on high level contractor experience and not project specific information. This was understood by PMKConsult and so the Contract negotiations were brought forward, therefore de-risking another element of the project at the same time.

Having a contractor on board at an early stage allowed the team to work in a collaborative manner to bring forward the design at the same time as completing the tender process. HLM and B&W were novated across to McLaren at an early stage, which not only progressed the technical design, but also ensured that the client design aspirations were protected.

This allowed the team to take a tight schedule and compress it further. 'Normal' dependencies in terms of programme were redefined as traditional or design and build procurement processes were adapted to deliver a unique procurement proposition.

This dependency management was taken forward to the construction and delivery stages as well. PMKConsult have demonstrated the value that the interface with the supply chain brought to the project, but there were also elements of the procurement that were adapted. Early placement of orders for HVAC and play equipment were required, often before the design had been finalised.

Throughout a project such as this risk can never fully eliminated, and in many ways, risks associated with this project were bigger and more impactful. What the team delivered was very much a process where they balanced the risk, and where a decision was made that created risk, they tried to balance that risk in other areas of the project. This meant that the whole team had to buy into the process, which was ultimately achieved.

4.0 Final Thoughts

The primary success of this project was that it delivered a new school, together with its newly implemented concept in the Emirate that opened their doors as promised to students and parents on 6th January 2019.

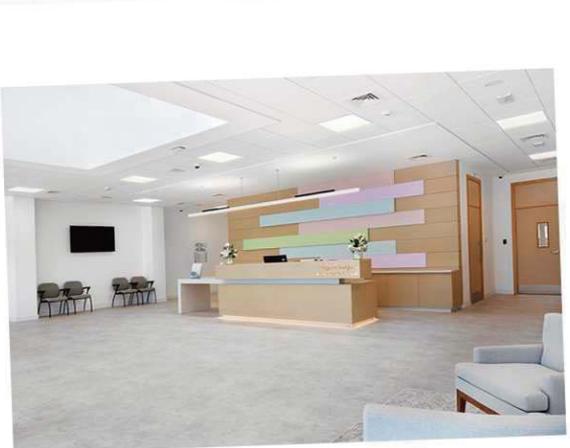
The better measurement of success is the immediate feedback now being received from the parents of the children – who are advocates of the design, the facility and the staff running the school as the following link to a parents’ video well demonstrates. [A father’s story.](#)

“The only way this Project was going to happen in the timeframe was for everybody involved to be 110% focused and forward looking”

Kevin Woolley, Managing Partner at PMKConsult

“McLaren International are very privileged to have been involved as Main Contractor in the successful delivery of this extremely important educational facility for Abu Dhabi and its students. It was a pleasure to work collaboratively with such a focused and spirited team; combined pride and determination to succeed enabled this project to be fully operational and accept students on time.”

Mark Stephen Hunt, Regional Managing Director of McLaren International



Graphic 3: Quotes from Stakeholders