

TABLE OF CONTENTS

- INTRODUCTION
- LICEINES
- ORGANIZATIONAL CHART
- SPECIFICATIONS
- QUALITY POLICY STATEMENT
- HELTH AND SAFETY POLICY
- ALUMINUM SYSTEM TEST REPORT
- EQUIPMENT AND MACHINERY
- MAJIOR PROJECTS



INTRODUCTION

Style Metal Established in DUBAI 2006 to continuo successful of the Aluminum Technology in the north emirates.

we(In Dubai) (in Al Qusies Ind.) are specialist in the design, fabrication, and instalation of aluminum architectural products for building industry, Tiercial Buildings, High Rise Buildings, Villas and Mosques and is also a specialist in providing project management in curtain walls and cladding industry a contractor with highly equipped and professional manpower to assure that company will make no compromise in quality and precision of finished products.

Strong team of highly experienced technical personnel were built in order to cater the rising demand of high quality finished aluminum architectural products capable of meeting the **Style Metal** Technology requirements and providing efficient site management system to fulfill the demand of the construction Industry in UAE and Middle East.

LICEINES





				License Details	سيل الرخصة / و
License No.			584979		الرخصة
Company Name			(0.0	ستابل ميتال للصناعات المعننية(ش. ذ.	الشركة
	STYLE METAL MANUFA	ACTURING (L L C)		ستايل ميتال للصناعات المحدنية(ش. ذ. م. م)	م التجارى
Trade Name	STYLE METAL MANUFACT	URING (LLC)	,	ساوی مردان تعمد عث المعدود (س. د. م. م	55,7
Legal Type	Limited Liability Company(L	LC)		ذات مسئوثية محدودة	ل القانونى
Expiry Date	18/08/2019	تاريخ الإنتهاء	Issue Date	19/08/2006	خ الإصدار
D&B D-U-N-S ⊗ N	561527156	الرقم العالمي	Main License	No 584979	الرخصة الام
Register No.	998573	رقم السجل التجارى	DCCI No.	112062	رية الغرقة
				License Me	mhers / i
				LICETISE ME	illibers / a
الحصص / Share	الصفة / Role	National	الجنسية / ity	الإسم / Name	لشخص/.No
Share / المصنى	الصفة / Role مدير / Manager		O. S. C.	الإسم / Name متي جمال ابر الغيط / amal abu elghit بة / License Activities	3193
	مذير / Manager ducts Manufacturing		O. B. C.	amal abu elghit / هاتي جمال ابوالغوط بة License Activities / بة بة للمباتي اللحريق	319. لا الرخصة التجاري عة الإشغال المعدني بة الأبواب المقاومة
Building Metal Prod Fire Resistant Doo	Manager / مذير ducts Manufacturing rs Manufacturing	Eg	ypt / مصر hani ga	amal abu elghit / هاتي جمال ابوالغيط ية License Activities / بة بة للمباتي الحريق	319 لـ الرخصة التجاري مة الإشغال المعدني له الأبواب المقاومة ان / ddress/
Building Metal Prod	مذير / Manager ducts Manufacturing		O. B. C.	amal abu elghit / هاتي جمال ابوالغوط بة License Activities / بة بة للمباتي اللحريق	319: لـ الرخصة التجاري مة الإشغال المعدني له الأبواب المقاومة ان / ddress. بى بريد
Building Metal Prod Fire Resistant Doo	Manager / مذير ducts Manufacturing rs Manufacturing	Eg تثيفون	p.O. Box Parcel ID	amal abu elghit / يَ جَمَالُ ابوالغيفُهُ يَّةُ لَلْمَالِيَّةُ يَّةُ لَلْمَالِيَّةِ الْلَّحْرِيقَ A 231072	3193 الرخصة التجاري مة الإشعال المحنايي نة الأبواب المقاومة بان / ddress. بى بريد تقطعة
Building Metal Prov Fire Resistant Doo Phone No Fax No	Manager / مذير ducts Manufacturing rs Manufacturing 971-4-2679645	Eg تثيقون فتص	p.O. Box Parcel ID	المائي جمال ابوالغيط / License Activities . المائي جمال المائي	عة الإشغال المعنفي فة الأبواب المقاومة إن / ddress. بق بريد القطعة
Building Metal Prov Fire Resistant Doo Phone No Fax No	Manager / مذير ducts Manufacturing rs Manufacturing 971-4-2679645	Eg تثيقون فتص	p.O. Box Parcel ID	المائي جمال ابوالغيط / License Activities	319% الرخصة التجاري مة الإشغال المحدي بة الأبواب المقارمة بان بريد ونسمة دبي المقاري معتقلت / marks ر سب المعصر الش
Building Metal Prov Fire Resistant Doo Phone No Fax No	Manager / مذير ducts Manufacturing rs Manufacturing 971-4-2679645	تثيقون فتص فتص هتف متحرك	ppt / مصر hani ga P.O. Box Parcel ID ركم لافاع المنني، دبي	المائي جمال ابوالغيط / License Activities	319: لم الرخصة التجاري لم الرخصة التجاري عمد الإساسة التجاري المقارسة المواجعة المواجعة المعارسة المعارسة دبي المقاري لم المواجعة المواجع
Building Metal Proo Fire Resistant Doo Phone No Fax No	Manager / مذير ducts Manufacturing rs Manufacturing 971-4-2679645	تثيقون فتص فتص هتف متحرك	ppt / مصر hani ga P.O. Box Parcel ID ركم لافاع المنني، دبي	المائي جمال ابوالغوط / License Activities . المائي جمال ابوالغوط المائية المائية . A 231072 . 365-300	319: لم الرخصة التجاري لم الرخصة التجاري عمد الإساسة التجاري المقارسة المواجعة المواجعة المعارسة المعارسة دبي المقاري لم المواجعة المواجع

Print Date 09/09/2018 15:09 ناريخ الطباعة 15:09 Receipt No.

بمكتك الآن تَجِذِيد رخصتك التَّجِزية من خلال الرسائل النصية التَصيرة، أرسل رقم الرخصة إلى 6969 (دو/اتصالات) للحصول على الن النفع. Now you can renew your trade license by sending a text message (SMS). Send your trade license number to 6969 (Du/ Etisalat) to receive payment voucher.

وثيقة الكثرونية معتدة وصادرة بدون توقيع من دائرة التنمية الالتصادية لمراجعة صحة البيانات الواردة في الرخصة برجاء زيارة الموقع Approved electronic document issued without signature by the Department of Economic Development. To verify the license kindly visit





ترخيص مصنع - بإمارة دبي

M14 2018 1-1

سنا 4 التسرخيص:

اسسم صاحب الترخيص تم اصدار الترخيص استناداً إلى القرار الوزاري رقم(213) لسنة 2017 ، في شان تنظيم خدمات الدفاع المدني

أطراف السرخصة

ستايل ميتال للصناعات المعنية رقم الرخصة و 384979 رقم السجل

الإمارات

998573

الإدارة العامة للدفاع المدني - دبي **United Arab Emirates**

Ministry of Interior **DCD General Directorate**

دولة الإمارات العربية المتحدة

سعود قاسم عدالكريم عدالله عري

الجنسية

04-2679659

رقم الفاكس

04-2679645

3

231072

Fax: 009714 2612449

Fel.: 009714 2611111

P.O. Box 11377 Dubai United Arab Emirates

دبي - القصيص الصناعية الثالثه

info@stylemetal.ae و2018/08/30

تاريخ الانتهاء

م2019/05/09

ت أسست بتاريخ | 92006/08/19 | تاريخ الإصدار

الموقع /البريد الالكتروني

عنسوان الشركسة

عدد المعدات والأجهزة المعتمدة

Emergency

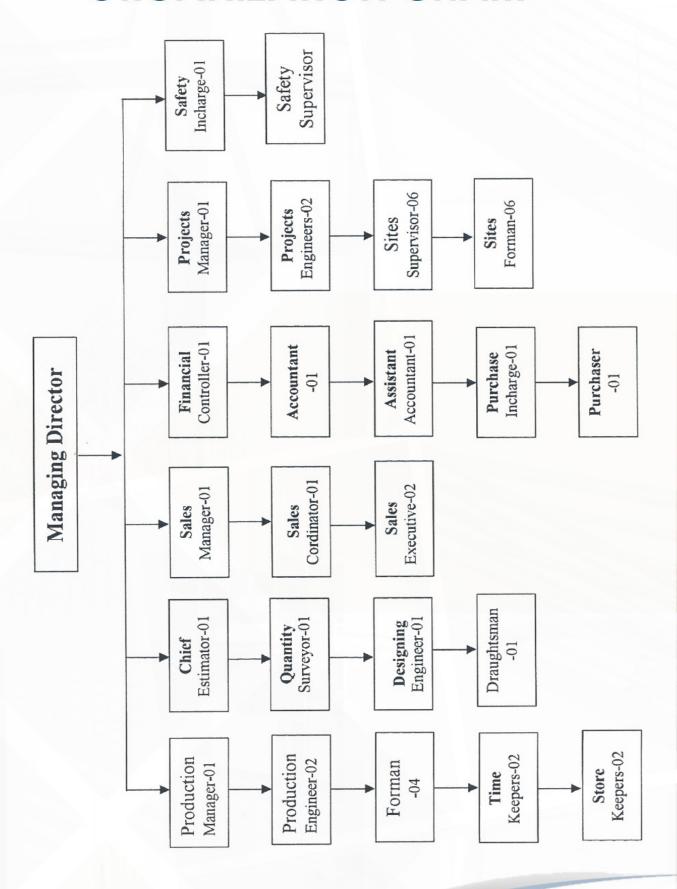
يعتمد/ عن مدير الإدارة العامة للدفاع المدني/دبي

أن تكون دولمة الإمسارات المعربيسة المتحسدة من أفضل دول العساليم في تحقيق الأمسن والسسلامة

www.dcd.gov.ae

766

ORGANIZATION CHART

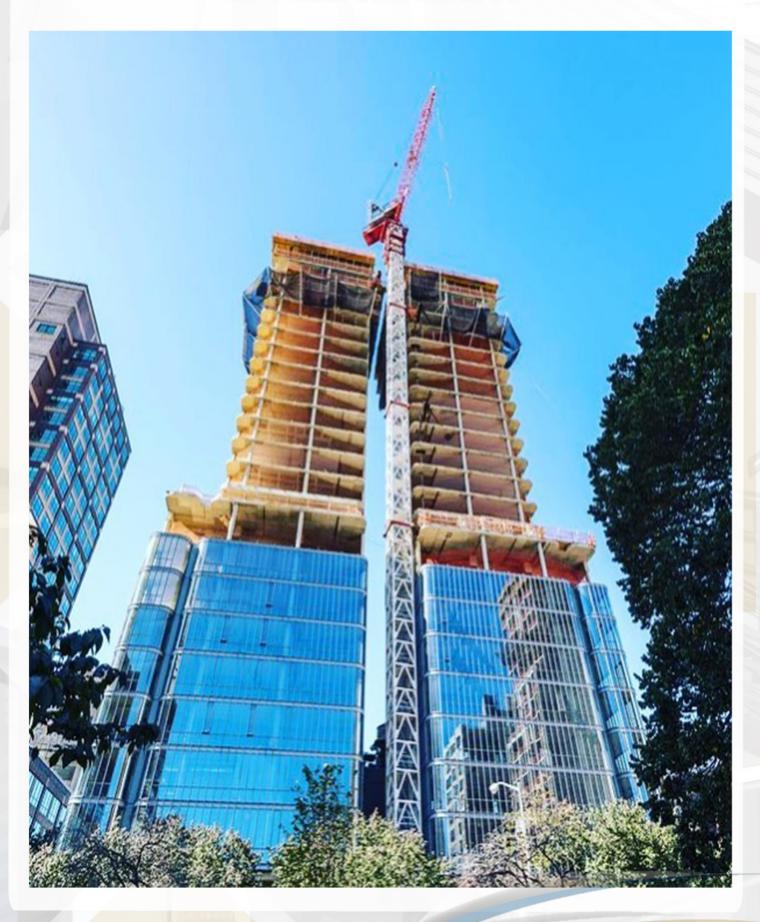




nstallation department

We take good care of your project because it's our project. Each of our sections either steel or aluminum do have their designated staff for installation. With their vast experience in U.A.E and understanding of each site condition be assured that we will get the job done on time and to your maximum satisfaction.

SPECIFICATION



GENERAL SPECIFICATIONS

(A) Tender Requirements

- Tenders are asked to base their on these general specifications of metal works plus the particular Requirements in cluded hereinafter.
- 2. This part of the specifications is general and its describes the technical requirements, materials and installation for all the aluminium works systems including the curtain wall system, doors and windows. The included particulars requirements section are:
- a. Curtain walls.
- b. Aluminium doors and windows.

Proposals should be for a recognized proprietary system. Other systems may be considered but must undergo preconstruction.

3. Testing as specified hereinafter. Systems which are not pressure equalized (rain screen) will not be taken into consideration.

(B) Scope

- **1.0** This specification covers ferrous and non-ferrous metal be used in the works all in accordance with the drawings and as directed by the engineer.
- 2.0 For more elaborate description of each used system and its scope refer to the particular requirements section mentioned under (A) 2.
- The contractor shall provide all curtain wall, doors and windows, architectural aluminum works which are shown on or implied by the drawings and required for the work.
- **4.0** The scope includes all framing, anchors, glass, Glazing, insulation, sealants and other components required for the complete systems and its installation.
- 4.1 Glass to be high performance double glass.
- 4.2 All sub frames, fastenings, brackets, ironmongery, accessories, trims, locks, latches, handles, stays mechanisms, insect screens, weather seals, etc., necessary for a complete installation.

(C) Design standards and responsibilities

- 1. Provide drainage and ventilation to the glazing rebate.
- Masonry work enclosed with curtain wall shall be sealed with a damp proof cooling.
- Mullion and transom locations and sizes of all glazed works are to be as generally
 described in the contract drawings. Provide notification to the engineer as soon as
 discrepancies are discovered.
- All materials components and systems shall be of the particular. Manufacturer's best grade.
- 5. Design work in general to have work pre built so that erection can proceed Rapidly.
- 6. The curtain wall subcontractor shall coordinate with the contractor to develop

- 7. The layout of all partitions that will affect the design of the curtain walling shall be obtained from the contractor. The curtain wall subcontractor to ensure alignment of interior partitions with the curtain wall grid.
- 8. Poured and debridged thermal break is mandatory. However thermal isolation of exterior exposed aluminium shall be incorporated.

(D) Performance requirements.

1. General:

All systems included in this specification shall conform to the standards set forth below. Operable windows within the curtain wall shall meet the same design loads and water penetration requirements as the curtain wall.

The design pressure shall be calculated in accordance with BS CP3, Chapter V Part 2 1970, or ANSI/ASCE 7-95, based on a design wind speed of 45m/s. but shall not be less than 2.3Kpa (approximately 230 Kg/m2.

2. Perimeter Seals:

Design and installation systems to permanently resist leakage of air and water. Perimeter seals shall be sealed airtight and remain air tight under the system design loads. The primary perimeter seal shall be air tight to the satisfaction of the engineer prior to placing secondary seals or closures.

3. Air infiltration:

Provide systems that have a maximum air leakage, infiltration or exfiltration, of 1.1m3/hr/m2 when tested at a pressure of 300 Pa.

4. Water penetration:

Water penetration is defined as the presence of water other than condensation, on the interior side of the glazing or framing, as a result of testing or natural precipitation. Water contained within the frames of operable windows that can drain to the exterior is not considered leakage. Provision shall be made to drain to the exterior face any water entering the system. No water penetration shall occur at a static test differential pressure of 20% of the inward design wind load or 575pa, whichever is lower.

No water penetration shall occur when the wall is tested in accordance with AAMA 501.1 using dynamic pressure at a pressure equivalent to the static pressure for the type of project as specified above.

5. Deflection Limitations:

The curtain wall system and all other aluminium works systems shall be capable of withstanding building movements and weather exposures including wind loading and of performing within the following limitations, under the required design load both positive and negative specified, deflection of framing members, measured perpendicular to the plane of wall, shall not exceed 1/180 of the unsupported span or a maximum of 20mm. Cumulative deflection shall not exceed 20mm.

6. Thermal movement:

The curtain wall system shall be capable of withstanding thermal movements resulting from an ambient temperature differential of 700c, without causing bucking, stresses on glass, failure of sealants, damaging loads on fasteners, reduction of performance or other detrimental effects. Calculate allowances based on the temperature at which the aluminium sections are fabricated.

7. Thermal performance:

The fixed light area of the curtain wall, including glass and aluminium framing, shall have a condensation resistance factor, CRF, not less than 60 when tested in accordance with AAMA 1503.1

8. Fire Resistance Requirements:

- **a.** Performance of panels and fire resistance assemblies under fire or high temperature exposure shall be as follows.
- **b.** Material shall not produce noxious gasses under conditions of high temperature.
- c. The spandrel panel must be designed and anchored in a manner that it will stay in place and prevent passage of smoke, flame and hot gases for the two hour fire exposure period when exposed to the ASTM E 119 time temperature curve.
- **d.** Fire stops and saving insulation shall be provided between the interior wall surface and the building structure. Two hour separation shall be provided continuously as follows: Horizontally at each slab.

(E) Curtain Wall system

- Curtain wall units and components shall be produced in accordance with the approved system and submittals.
- 2. Design systems based on pressure equalization and compartmentalization of the glazing rebate system.
- Seal transom to mullion joints so that glazing rebate is sealed form building interior.
- **4.** Allow for vertical and horizontal movements in the system due to thermal expansion or contraction, wind loads, building loads and long term creep.
- Framing shall be designed to provide for glazing or reglazing from the outside.
- 6. Seal mullion expansion joints.

(F) Anchorages

1. Anchorage of the work to the structure shall be by approved methods in strict accordance with approved shop and or erection drawings. Supporting brackets shall be so designed as to provide adjustment and accurate location of all components. After the unit is properly positioned, all connections so designated on approved shop drawings shall be properly fixed, while still allowing for horizontal thermal expansion and contraction.

- 2. Mark mullion center line on anchorages for accurate alignment of unitized panels (If applicable).
- Framing anchors shall be structurally adequate to carry the weight of the wall units, shall allow for thermal movement and shall meet the structural requirements.
- 4. Curtain wall anchorages in general shall be designed to be fastened into the slab top surface on a bed of non shrink grout, with approved stainless steel anchor bolts, or into the edge of the floor slab. Anchorages may be constructed out of extruded aluminium or welded steel. Anchorages shall be finished with an organic coating. Steel anchorages shall be hot dip galvanizes prior to finishing

(G) Insulation and spandrel panel arrangement

 The thermal insulation should meet the thermal transmittance requirements.

(H) Curtain wall System must meet the following:

- 1. For curtain wall windows a minimum size of profile to be used with the required 60mm in width, to be confirmed by structural calculation.
- 2. For continuous curtain wall a minimum or maximum size profile to be used is confirmed by structural calculation.
- 3. Corner rubber must be used between the mullion and transom to insure the tightness of the system.
- **4.** All curtain wall to be conventional 2-way or 4-way at certain location as shown on Architectural Drawing.

(I) Glass

- Vision Panel: 6mm High performance reflective glass tempered + 12mm air spacer + 6mm clear glass (inner pane to be when tempered glass is below 80cm from F.F.L)
- 2. Spandrel panel: 6mm high performance reflective glass tempered +50mm Rock wool insulation with density 50kg/m3.

(J) Accessories

The system accessories and fitting must be used in high quality standard.

(K) Aluminium Finishing

Aluminium to be polyester powder coated in a color approval by the consultant.

Glazed Aluminium Framing Standards.

1. GENERAL

10. CODES AND STANDARDS

General

- 1. AMA Aluminium curtain wall design manual.
- **2.** AAMA Metal curtain wall, window, storefront and entrance- Guide specification manual.
- **3.** AAMA Curtain wall manual # 10 Care and handling of architectural aluminium from shop to site.

Windloads

- 1. BS 6399.2 Code of practice for windloads.
- 2. BS CP3 Ch5 Part 2:1972 Windloads

Aluminium

- 1. ASTM B209 Aluminium and aluminum-alloy sheet and plate.
- ASTM B221 Aluminum-alloy extruded bars, rods wire, shapes, and tubes.
- **3.** ASTM B308 Aluminium-alloy 6061-T6 standard structural shapes, rolled or extruded.
- **4.** BS1470 Specification for wrought aluminium and aluminium alloys-plate, sheet and strip.
- **5.** BS1474 Specification for wrought aluminium and alum. Alloys bars, extruded tubes and sections.
- 6. BS8118 Specification for the structural use of aluminium.

Glass and Glazing

- ANSI Z97.1 Specifications and methods of test for safety glazing material used in buildings.
- 2. ASTM CI 036 Specification for flat glass.
- 3. ASTM CI 048 Specification for heat treated flat glass.
- 4. ASTM CI 172 Specification for laminated architectural glass.
- 5. ASTM E773 Test method for seal durability of sealed insulating glass units.
- 6. ASTM E774 Sealed insulating glass units.
- ASTM El 300 Standard practice for determining load resistance of glass in buildings.
- 8. FGMA-Flat glass marketing association: Glazing manual.
- 9. BS 952 Glass and glazing.
- **10.**BS 6206 Spec, for impact performance requirements for flat safety glass and plastics for use in buildings.
- 11.BS 6262 Code of practice for glazing of buildings.

Sealants

- 1. ASTM C794 Test methods for adhesion-in peel of elastomeric
- 2. joint sealants
- **3.** ASTM C920 Elastomeric joint sealants. BS 5889 Specification for one part gun grade Silicone based sealants

Gaskets

- 1. ASTM C509 Cellular elastomeric preformed gaskets
- 2. ASTM C864 Dense preformed gaskets
- 3. ASTM C1115 Silicone Gaskets
- **4.** BS 4255 Rubber for use in preformed gaskets for weather exclusion from buildings.

Protective Coatings.

- 1. AAMA 2605 Voluntary specification for high performance organic coatings on architectural extrusions and aluminum.
- **2.** AAMA607.1 Spec, and inspection methods for clear anodic finishes for architectural aluminium.
- **3.** AAMA608.1 Specification and Inspection methods for electrolytically Deposited Color Anodic finishes for architectural aluminium.
- **4.** BS3987 Spec, for anodic oxidation coatings on wrought alum. For external architectural applications.
- **5.** BS4842 Specification for liquid organic coatings application on aluminium alloy extrusions, sheet and performed sections for external architectural purposes.
- 6. BS6161 method of test for anodic oxidation coatings on aluminium alloys.
- **7.** BS6496 Specification for powder organic coatings on aluminium extrusion, sheet and performed sections for external architectural purposes.
- **8.** BS6497 Specification for powder organic coatings on hot dip galvanized sections and sheet for external architectural purposes.

Fire Protection

1. BS476 Fire tests on building materials and structures.

Performance Testing.

- 1. ASTM E283 Rate of air leakage through exterior windows, curtain walls, and doors.
- 2. ASTM E330 Structural performance of exterior windows, curtain walls, and doors by uniform static air pressure difference.
- 3. ASTM E331 Test method for water penetration of exterior windows, curtain walls, and doors by uniform static air pressure difference.
- 4. AAMA 501 Method of testing for exterior walls.
- **5.** AAMA 501.1 Standard test method for exterior windows, and curtain walls for water penetration using dynamic pressure.
- **6.**AAMA 501.1 Field check of metal curtain walls for waterleakage. BS5368 Methods of testing windows. BS6375 Performance of windows.

Steel

- 1. ASTM A36 Structural steel.
- 2. ASTM A123 Zinc (hot-dip galvanized) coatings on iron and steel products.
- **3.** ASTM A525 GEN requirements for steel sheet, zinc-coated (galvanized) by the hot-dip process.
- **4.** ASTM A526 Sheetsteel, zinc coated (galvanized) by the hot-dip process, commercial quality.
- **5.** BS729 Specification for hot dip galvanized coatings on iron and steel **Fasteners**
- 1. BS4190 Specification for ISO metric black hexagon bolts, nuts and screws.

Miscellaneous

1. BS6651 Code of practice for protection of structures against lightning.

B. GENERAL

- 1. Metal framed systems with interior and exterior exposed metal framing.
- 2. Operable vent with sight line concealed from the exterior.
- System supplier shall provide curtain wall systems, including necessary modifications to meet specified requirements and maintaining visual design concepts.
- **4.** Fabricate glazing systems for exterior glazing at vision areas and exterior glazing at spandrel areas.
- **5.** Perimeter conditions shall allow for installation tolerances, expansion and contraction of adjacent materials, and sealant.
- 6. Manufacturer's recommended joint design.
- 7. Do not assume glass, sealants, and interior finishes contribute to framing member strength, stiffness, or lateral stability.
- **8.** Anchors, fasteners and braces shall be structurally stressed not more than 50% of allowable stress when maximum loads are applied.
- **9.** Allow for expansion and contraction due to structural movement without detriment to appearance or performance.
- 10.Water entering joints and condensation occurring within system shall drain to exterior face of wall, by drain holes and gutters of adequate size to evacuate water without infiltration to interior or the top of lower lites of glass.
- 11. Provide concealed fastening.
- **12.**Metal faces are required to be visually flat under all lighting conditions subject to acceptance of Architect.
- **13.**Provide uniform color and profile appearance at components exposed to view.
- **14.**EPDM Glazing gaskets are to be provided to the interior and exterior of the glass. The gasket should create a water and air seal.
- **15.**Provide pre-drilled pressure plates to ensure correct quantity and spacing of fasteners.
- 16.Stresses placed on structural silicone sealants shall be kept within sealant manufacturer's recommended maximum. Vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system are all not permitted

C. PERFORMANCE REQUIREMENTS

- 1. The curtain wall system is designed to meet the following performance standards for the fixed areas
- **a.** Air infiltration-infiltration shall not exceed 1.08m3/h/m2 of fixed area at a static test pressure of 75pa in accordance with ASTM E283.
- **b.** Water penetration- There shall be no visible water on any inside surface at a test pressure of 720pa when tested in accordance with ASTM E331.

D. Structural requirements.

- 1. Wind loading: Design to a basic windspeed of 45m/s (factors and coefficients according to BS CP3 or BS6399 to be applied)
- 2. Maximum deflection under uniform loading at design wind pressure shall not exceed L/175 of span or 20mm when tested in accordance with ASTM E330.
- 3. Parallel to wall deflection shall not exceed 3mm.

E. CAST IN INSERTS

- 1. Furnish inserts and anchoring devices that need to be preset and built into structure.
- 2. Supply on timely basis to avoid delay in work.
- 3. Instruct other trades of proper location and position.
- 4. Furnish setting drawings, diagrams, templates and installation instruction.

F. SUBMITTALS

- Submit manufacturer's descriptive literature for each manufactured products.
- 2. Submit information for factory finishes, accessories and other required components.
- 3. Submit Mock-up Drawings.
- 4. Submit project drawings indicating: elevations, detailed designed, dimensions, member connections, thickness of various components, drainage details and flow diagrams, anchorage, system, interfacing with building construction, provisions for system expansion and contraction, thermal breaks. Also indicate glazing details, methods, locations of various types and glass thickness, emergency breakout locations, internal sealant requirements. Clearly indicate locations of any exposed fasteners and joints for Architect's acceptance. Clearly show where and how manufacturer's system deviates from contract drawings and specifications.

G. SAMPLES

- Submit manufactures samples indicating quality of finish in required colors.
- 2. Where normal texture or color variations are expected, include additional samples illustrating range of variation.
- 3. Submit samples of glazing gaskets, 300mm lengths.
- 4. Submit samples of sealants for color selection.
- **5.** Submit manufacturer's certification stating that installed system is in compliance with specified requirements.
- **6.** Submit manufacturer's printed installation instructions. (Include detailed instructions describing each step of reglazing procedures.)
- 7. Warranty: Submit specified warranties.

H. DELIVERY, STORAGE, AND HANDLING

- 1. Protect finished surfaces to prevent damage.
- 2. Do not use adhesive papers or sprayed coatings which become firml bonded when exposed to sun.
- 3. Do not leave coating residue on surfaces.
- 4. Deliver glass units with manufacturer's labels intact on interior side or glass, Ensure labels indicate glass thickness, unit location, glass strength and orientation o units in vertical position.
- Protect glass edges and corners to prevent chipping, cracking, and other similar damages.

J. PROJECT CONDITIONS

1. Ensure ambient and surface temperatures and joint conditions are suitable for installation of materials.

K. WARRANTY

- 1. Provide written warranty in form acceptable to Owner jointly signed by manufacturer, installer and Contractor warranting work to be watertight, free from deflective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components which fail within 5 years from date of Substantial completion.
- a.Warranty shall cover following: Complete watertight and airtight system installation within specified tolerances.
- **b.**Glass and glazing gaskets will not break or "pop" from frames due to design wind, expansion or contraction movement or structural loading.
- **c.**Glazing sealants and gaskets will remain free from abnormal deterioration or dislocation due to sunlight, weather or oxidation.

L. LIFE EXPECTANCY

 Fa9ade to perform satisfactorily for 25years with minimum maintenance (apart from regular cleaning).



PRODUCTS

A. MANUFACTURERS AND PRODUCTS

- 1. Subject to compliance with requirements indicated, provide aluminum system as supplied by the system manufacturers
- 2. Aluminum; ASTM B221, alloy 6063-T5 or T6 for framework extrusions and 6061-T6 for anchor brackets and shear blocks.
- 3. Internal Reinforcing to be ASTM A36 for carbon steel or aluminum alloys as specified in this document. Shop coat steel components after fabrication with zinc chromate primer complying with FS TT-P-645.
- **4.** Fasteners to be 304 grade stainless steel or Drill-flex steel fasteners with stalgard protective finish.
- **5.** Provide nuts or washers of design having means to prevent disengage ment deforming of fastener threads is not acceptable.
- **6.** Shims: Non-staining, non-ferrous, type as recommended by system manufacturer.
- **7.** Glazing Gaskets: Compression type design, exterior replaceable, extruded EPDM gaskets to be manufacturer's standard black color.
- **8.** Sealants to be Dow Corning, Wacker, sika or Tremco silicone and used i accordance with manufacturer's recommendations.
- **9.** A one hour firestop to be provided between the curtain wall and the structure to separate each floor from the floor below. This fire stop to be installed in accordance with the manufacturer's specifications.



B. SYSTEM FABRICATION

- Fabricate components in accord with approved shop drawings. Burrs are to be removed. Shop fabricate to greatest extent practicable to minimize field cutting, spicing, and assembly.
- 2. Disassemble only to extent necessary for shopping and handling limitations.
- a. Steel components: Clean surfaces after fabrication and immediately prior to application of primer in accord with SSPC-SP2 or SSPC-SP3 at manufacturer's option.
- **b.** Apply specified shop coat primer in accord with manufacturer's instructions to provide 2.0 minimum dry film thickness.
- **3.** Fabricate components true to detail and free from defects impairing appearance, strength or durability.
- 4. Fabricate components to allow for accurate and rigid fit of joints and corners. Match components carefully ensuring continuity of line and design. Ensure joints and connections will be flush and weather tight. Ensure slip joints make full, tight contact and are weather tight.
- **5.** Rain force components as required at anchorage and support points, at joints, and at attachment points for interfacing work.
- **6.** Provide structural reinforcing within framing members where required to maintain rigidity and accommodate design loads.
- **7.** Allow for adequate clearance around perimeter of system to enable proper installation and for thermal movement within system.
- **8.** Separate dissimilar metals with protective coating or performed separators to prevent contact and corrosion.

C.FINISH

 Finish to be in accordance with paint manufacturers and internationally recognized specification.

III. EXECUTION

A. INSTALLATION

- 1. Verify dimensions, tolerances, and method of attachment with other work.
- **2.**Install in accordance with manufacturer's instructions and applicable provisions of AAMA Aluminum Curtain Wall Design Guide Manual.
- 3. Align assemblies plumb and level, free of warp or twist, aligning with adjacent work.

a.Tolerances:

Limit variations from plumb and level:

- b.3mm in 6m vertically and horizontally.
- c.6mm in 12m in either direction.
- d.Step in face: 1.5mm maximum. Jog in alignment: 1.5mm maximum.
- **4.**Location: 6mm maximum deviation of any member at any location. (Tolerance are not accumulative.)
- **5.**Provide attachments and shims to permanently fasten system to building structure.
- **6.**Anchor securely in place, allowing for required movement, including expansion and contraction.
- 7.Separate dissimilar materials at contract points, including metal in contact with masonry or concrete surfaces, with protective coating or preformed separators to prevent contact and electrolytic action.
- **8.**Set cill members in bed of sealant. Set other members with internal sealants and baffles to provide weather tight construction.
- **9.**Ensure that deadload from curtain wall system is not transferred to stone veneer.
- 10.Installglazing gaskets and sealants in accordance with manufacturer's instructions including surface preparations.
- 11.Install fire safing and curtain wall insulation in accordance with manufacturer's instructions.
- 12. Carry out field hose test for water penetration.
- 13.Clean surfaces in compliance with manufacturer's recommendations: remove excess mastic, mastic smears, and other foreign materials. Clean metal surfaces exercising care to avoid damage.

Aluminium & Glass Maintenance Manual

Glass Maintenance: the following are recommendations from the glass manufacturer for the maintenance & cleaning of this project. The glass should never be cleaned in direct sunlight.

Only clean cloth & mild liquid detergent should be used to clean the glass. The detergent should be neutral. After washing, the glass should be rinsed off with clean water and then wiped dry. No abrasive cleaners or ammonia solution should be used.

If any straining occurred on the glass from any means which produces a mark. Then wall technology must be contacted immediately to come for an inspection and to advice on remedial action.

The cradle should definitely not be used when the conditions are little windy in order to reduce the possibility of breakage. If any breakage occurs, wall technology must be informed immediately to ascertain the reasons for breakage and liability for it.

If any fogging within the double glass cavity occurs, wall technology must be informed immediately. Weep holes should be rinsed frequently with clean water but no water under high pressure should be applied to the holes. Water should be allowed to stand on the silicone.

For more information, refer to the glass manufacturer's maintenance instruction attached. Aluminium Aluminium should be cleaned only with a soft cloth or with a solution containing a Mid, Non-Alkaline liquid detergent.



Maintenance Manual of Sealants

1.Expected life of Material

Generally, the service life for M/S Tremco Ind. Sealant should be minimum of Ten (10) Years provided if the preparation and application was carried out in correct manner.

2.Indications of Wear and Damage

The only indication of damage that would normally be seen is when the sealant is subjected to some Mechanical force. Changes in the surface appearance of the product will result primarily as the result of Atmospheric solution. These changes will be indicated simply by changes in color shade, which is due to dirt pick-up. The degree of change will obviously depend on the nature of local environment. No change in Elastosmeric properties will result if this change occurs.

3.Method and frequency of inspection

It is difficult to give any absolute rules to follow on this point. However, typical inspection frequency maybe listed as follows:

1st Inspection-Upon completion of sealing.

2nd Inspection- After one or two years.

3rd Inspection - Five years after completion followed by subsequent five-yearly inspection. Method of inspection can consist of

- (a) visual inspection,
- (b) exerting high pressure on the sealant to check adhesion.

4.Routine Maintenance Required

Routine maintenance, other than cleaning of the building way be as normally necessary, should not really be necessary.

5. Method of Cleaning

Dirt pick - up may occur as stated previously; if it occurs a slight change in shade may occur depending on local conditions and color of sealant.

Any dirt pick-up maybe washed of using water and if necessary, a detergent. No abrasion to be used as this could damage the surface of the sealant.

6.Method of Repair and Replacement

If an area of sealant is found to be defective during an inspection, the method of repair is straight forward in the area of affected material should be cut out using a sharp instrument.

The joint faces should be examined to make sure they dry and clean. A check should also be made that the backer rod is in place. If these conditions are fulfilled, then they maybe dunned into place and tooled off in the usual manner. Masking tape maybe needed to prevent sealant from spreading on the external faces of the joints. There is no problem in the new sealant adhering to the old sealant provided that the old sealant it cleans and dry.

7. Ordering New Material

If for any reason material is required to effect repairs, the product and the color should be quoted.

Quality Policy Statement

COMMITTED TO TOTAL CUSTOMER SATISFACTION

The quality management strategies of our company with the international standards of Total Quality Management systems, which ensures providing our clients with products and services that meet or exceed their requirements and expectation. Providing Total Quality Commitment to our customers and having therefore adopted the following fundamental principles with our business:-

- To ensure material's handling & protection.
- To ensure quality of material as British standard e.g.(BS: 6496) in everything we manufacture.
- To ensure proper storage & handling.
- Fabricated material quality check and dispatching system.
- To ensure proper handling of material at sites, installation proper leveling & alignment.
- To fully understand and clearly define our customer and supplier requirements, in order to meet their expectations.
- To involve all our staff, fully utilizing their skills and capabilities in developing our working practices.
- To create an environment for continuous improvement in the quality of our products and services.

Meeting the requirements of these standards requires regular reviews, and all activities are audited in a systematic manner to identify potential problems, introduce preventative solutions and provide a basis for continuous improvement.

SELECTED ACCOMPLISHED PROJECTS

ACCOMPLISHED PROJECTS

UNITED ARAB EMIRATES

GHWEIFAT BORDER GATE, Abu Dhabi

Contractor: Canon Engineering

Consultant: Altorath Engineering Consultants (AEC)

Contract Value: 1,250,000.00 AED

ABU DHABI NATIONAL EXHIBITION CENTER, Abu Dhabi

Project: Rainscreen Paneling by Hunter Douglas

Contractor: Hoesch Contecna Middle East

Contract Value: 6,000,000.00 AED

MIRDIF SCHOOL, Sharja

Contractor: Al Reem Metal Moulding Factory LLC

Contract Value: 123,000.00 AED

• DUBAI SPORTS CITY, Dubai

Contractor: Expat Group LLC

Consultant: Khatib & Alami Consolidated Engineering

Contract Value: 75,000.00 AED

AL SAFA/ JUMERAH VILLA

Client: Al Saffar Interiors LLC Contract Value: 380,000.00 AED

OASIA CENTER MALL, Dubai

Client: Al Saffar Interiors LLC Contract Value: 285,300.00 AED

MALL OF EMIRATES, Dubai

Project: BHS, EMAX (Shop Front, Glass Paneling,

Decorative Glass Mirrors)
Client: Al Saffar Interiors LLC
Contract Value: 225,000.00 AED

DEIRA CITY CENTER

Project: Shop Front, Automatic Sliding Doors

Client: DORMA Middle East Contract Value: 82,000.00 AED

BURJ DUBAL

Project: Mirror Glass (Supply & Installation)

Client: Falcon City

Contract Value: 125,000.00 AED

METRO STATION, DUBAI

Project: Automatic Sliding door

Client: DORMA Middle East

Contract Value: 300,000.00 AED

• NAD AL SHEBA, Dubai

Project: Aluminum Fencing works for Shk. Hamdan Majlis

Client: Dubai Municipality

Contract Value: 1,500,000.00 AED

• AL BARSHA, Dubai

Project: G+1 Typical Villas

Client: Al Banhawi Contracting Contract Value: 255,000.00 AED

RITZ CARLTON Hotel Apartment, DIFC

Project: G + 14 Bldg.

Client: FIT OUT Union Property Contract Value: 1,100,000.00 AED





PROJECT	101	GHWWIFAT BORBDER GATE,
LOCATION	1327	ABU DHABI
CLIENT	(4)	ALTORATH ENGINEERING CONSULTANT (AEC)
CONSULTANT	:	CANON ENGINEERING



PROJECT		ABU DHABI NATIONAL EXHIBTION CENTER	
LOCATION	1020	ABU DHABI	





PROJECT		XEROX EMIRATES HEAD QUARTERS
LOCATION	122	JEBEL ALI, DUBAI



PROJECT	301	HAWK FREIGHT L.L.C	
LOCATION	1.27	DUBAI	









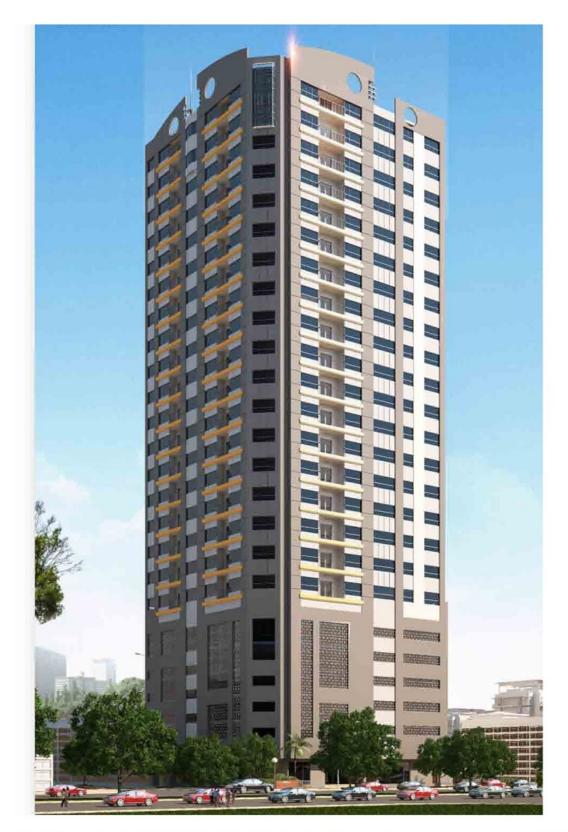




PROJECT	:	Raintree Rolla Hotel (2B+G+7+Roof + Health Club at roof)	
LOCATION	:	Plot No (3160202) at Al Raffa, Dubai, UAE.	
CLIENT	:	Ms. Maryam Ali Al Owais	
CONSULTANT	:	M/s Rashid Al Owais Engineering Consultants	



PROJECT		PROPOSED COMM. & RESIDENTIAL BUILDING G+6+HEALTH CLUB FLOOR
LOCATION	:	PLOT NO.4210490 AT AL WARQA'A 1ST, DUBAI
CLIENT	:	MR. ABDULLAH SALIM OBAID AL TURIFI AL SHAMSI
CONSULTANT	:	M/s BD &S MIDDILE EAST ENGINEERING CONSULTANTS



PROJECT	:	RESIDENTIAL BUILDING (G+5P+18 Typical)
LOCATION	:	AL KHAN, SHARJAH , UAE
CLIENT	:	Mr.Mohammed Ahmad Al Shafai
CONSULTANT	:	M/S Mazya Conlst.





PROJECT	:	4No's Residential Townhouse (G+2+R)
LOCATION	:	Plot No# (JVT06BVIL001) JUMIERAH VILLAGE Triangle, Dubai, UAE.
CLIENT	:	Dr. AHMED ABDELMONEM ABDELRAHMAN RAGAB
CONSULTANT	:	M/s Design Lab Engineering consultant



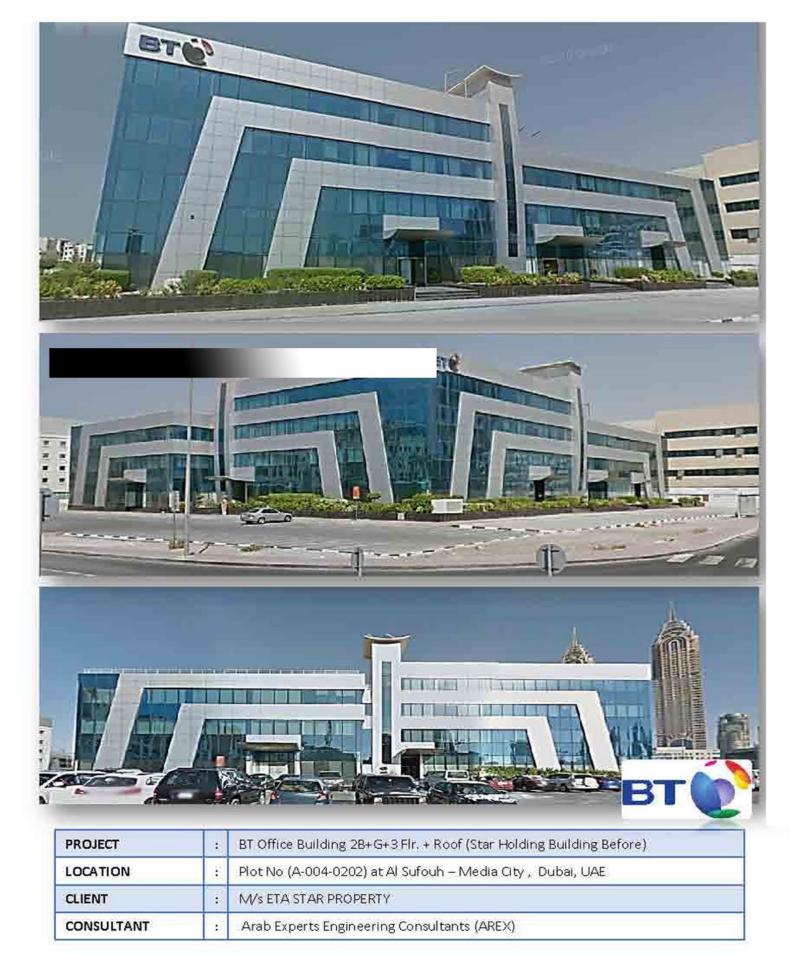
PROJECT	13	PROPOSED RESIDENTIAL BUILDING G+6+ROOF	
LOCATION	:	PLOT No: 6489212 at WADI AL SAFA 5, Dubai	
CLIENT	3	MR. ANTHONY HAIDEN	
CONSULTANT	9	M/s. Emirates Design Consortium	



PROJECT		Residential Building 2B+G+13 Typical Floor + Roof+ HC at roof
LOCATION	:	Parcel ID No:373-1298 At Al Barsha First, Dubai, UAE
CLIENT	:	M/s Sons of Omair Yousef
CONSULTANT	:	M/s AL SUWEIDI ENGINEERING CONSULTANTS BUREAU



PROJECT	101	PROPOSED RESIDENTIAL BUILDING G+6+ROOF	
LOCATION	1322	PLOT No: 6489224 at WADI AL SAFA 5, Dubai	
CLIENT	(4)	MR. ANTHONY HAIDEN	
CONSULTANT	(2)	M/s. Emirates Design Consortium	

















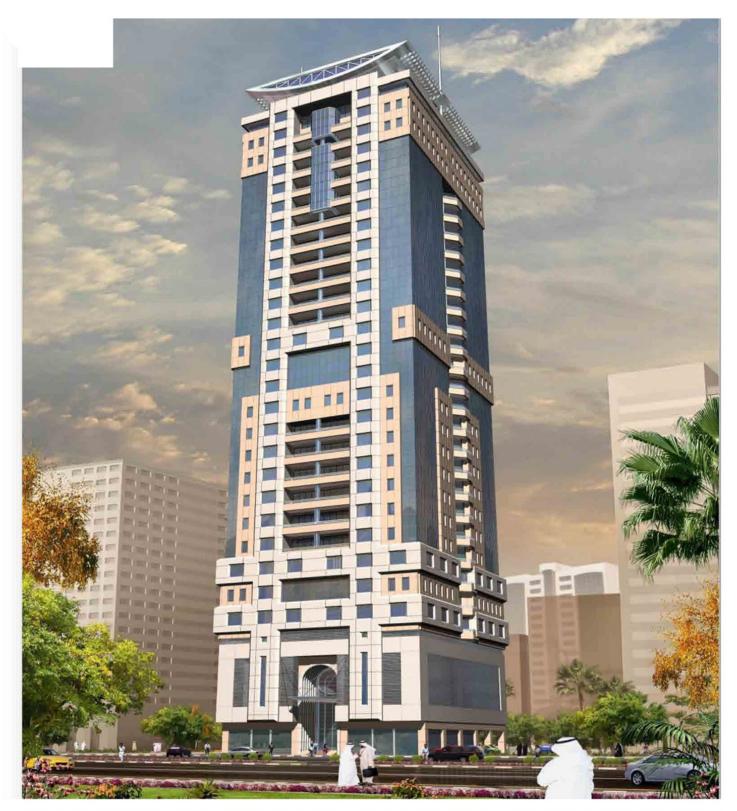








PROJECT	:	AL MA'ARIFA INTERNATIONAL PRIVET SCHOOL	
LOCATION	:	Al Azra, Sharjah, U.A.E.	
CLIENT	:	M/s AL MA'ARIFA INTERNATIONAL PRIVET SCHOOL	
CONSULTANT	:	M/s ARAB & Turk international consultants	



PROJECT	-	RESIDENTIAL BUILDING (B+G+4P+24+ PENTHOUSE+2 SERVICE + HC + HELIPAD)
LOCATION	:	AL MAMZAR , SHARJAH , UAE
CLIENT	:	H.H AMBASSADOR ABDULLA ABDUL AZIZ AL DOWAIKH
CONSULTANT	:	M/S Mazya Conlst.

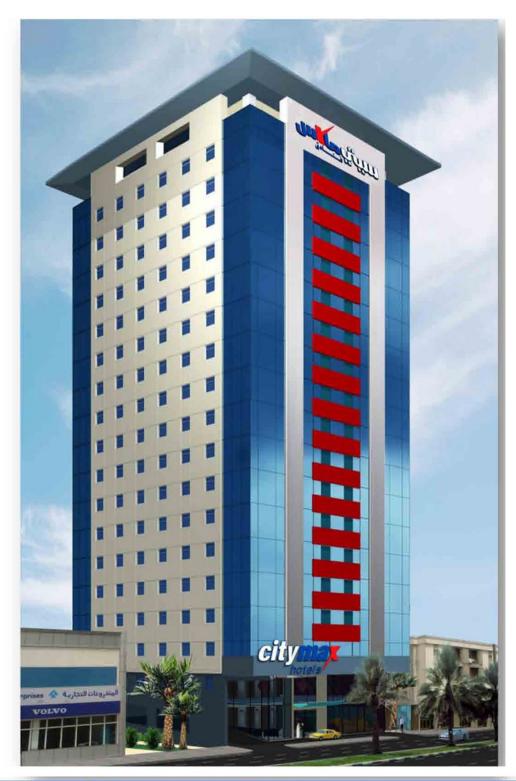




PROJECT		TIME Opal Hotel Apartments (1B+G+8+R+Health Club at Roof)	
LOCATION	:	Plot No (3731266) at Al Barsha 1st – Dubai, UAE.	
CLIENT	:	Mr. Othman Abdulla Zaman	
CONSULTANT	:	M/s Shadid Engineering Consultants (SEC)	



PROJECT	35	Proposed Residential Building (G+ 4 typical floors + Roof)	
LOCATION		Plot No# (RC-97) Dubai World Central, Dubai, UAE	
CLIENT	4	Mr. Omran Matar Taryam	
CONSULTANT		M/s Emirates Design Consortium	



PROJECT		City Max Hotel G + F + 3P + 13 TYP HOTEL BUILDING
LOCATION	:	AL NAD , SHARJAH , U.A.E
CLIENT	:	Mr. Ibrahim Askar
CONSULTANT		M/S Steps engineering consultant







PROJECT	:	INVEST BANK OFFICES BUILDING B+ GF (LEVEL 1&2) + 7 FLOORS	
LOCATION	:	AL QASIMIAH, SHARJAH, U.A.E.	
CLIENT	:	M/s INVEST BANK	
CONSULTANT	:	M/s Al Teraz Engineering Consultants	













PROJECT	:	Time Topaz Hotel Apartments (1B+G+8+Health Club at Roof)	
LOCATION	:	Plot No (3731290) at Al Barsha 1st – Dubai, UAE.	
CLIENT	:	M/s Time Topaz Hotel Apartments	
CONSULTANT	:	M/s Dubai Consultants	



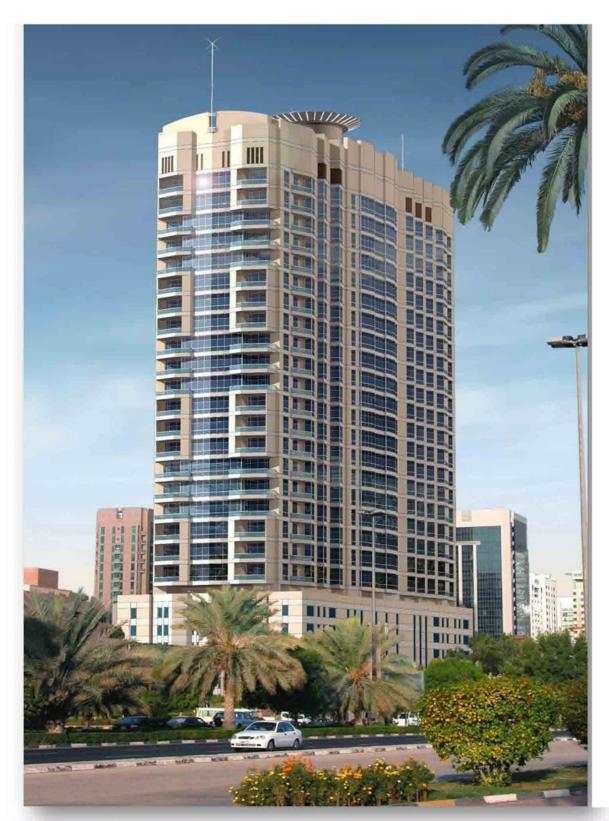
PROJECT	:	Proposed residential Building B+ G+10 Typical Floor +HC
LOCATION	:	Plot No:241-163 At Al Nahda Second, Dubai, UAE
CLIENT	:	Mr. Salem Mohd. Ahmed Bin Mesmar
CONSULTANT	:	M/s DESIGN LAB ENGINEERING CONSULTANTS



PROJECT	:	Res.& Comm. Towers (Nos.4) B+G+ 5P + Service Floor + 24 Typ.	
LOCATION	:	Al Nahda , Sharjah , U.A.E.	
CLIENT	:	H.H. SHAIKH MUSALLAM SALEM BIN HAM	
CONSULTANT		M/s AL ENSHAA ENGINEERING CONSULTANTS	



PROJECT	:	Residential Building (G+ 1P+5 Typ. Flr)	
LOCATION	:	Plot No# (115/696) At Mowaileh, Sharjah, UAE.	
CLIENT	:	Ms. Fatima Hamad Abdul Rahman Medfa & Partner	
CONSULTANT	:	M/s AL TERAZ ENGINEERING CONSULTANTS	



PROJECT	:	Al Owais Residential Bldg. G+ 5P+ 20 + HC + ROOF + HELIPAD	
LOCATION	:	Al Khan , Sharjah , UAE	
CLIENT	:	Mr. Salim Omran Al Owais	
CONSULTANT	:	M/s KHATHIB & ALAMI CONSULTANTS	



PROJECT	:	Residential and commercial Building (G+ 4 Parking+20 typical floors + Roof)	
LOCATION	:	Plot No# (JVC18TCP017B) At JUMIERAH VILLAGE CIRCLE, Dubai, UAE	
CLIENT	:	M/S L.H.O REAL ESTATE – Mr. MHAMED BAKRI	
CONSULTANT	:	M/s NEXT ENGINEERING CONSULTANTS	





PROJECT	13	I MALL SHOPPING MALL (B+G+M+3)	
LOCATION	1	PLOT NO. 331, AL NAHDA-SHARJAH	
CLIENT	14	M/s AL BUSTAN BINALI	
CONSULTANT	3	M/S Mazaya Eng. Conslt.	



