ANTOINE MAKHLOUF FOR TRADING & CONTRACTING S.A.L

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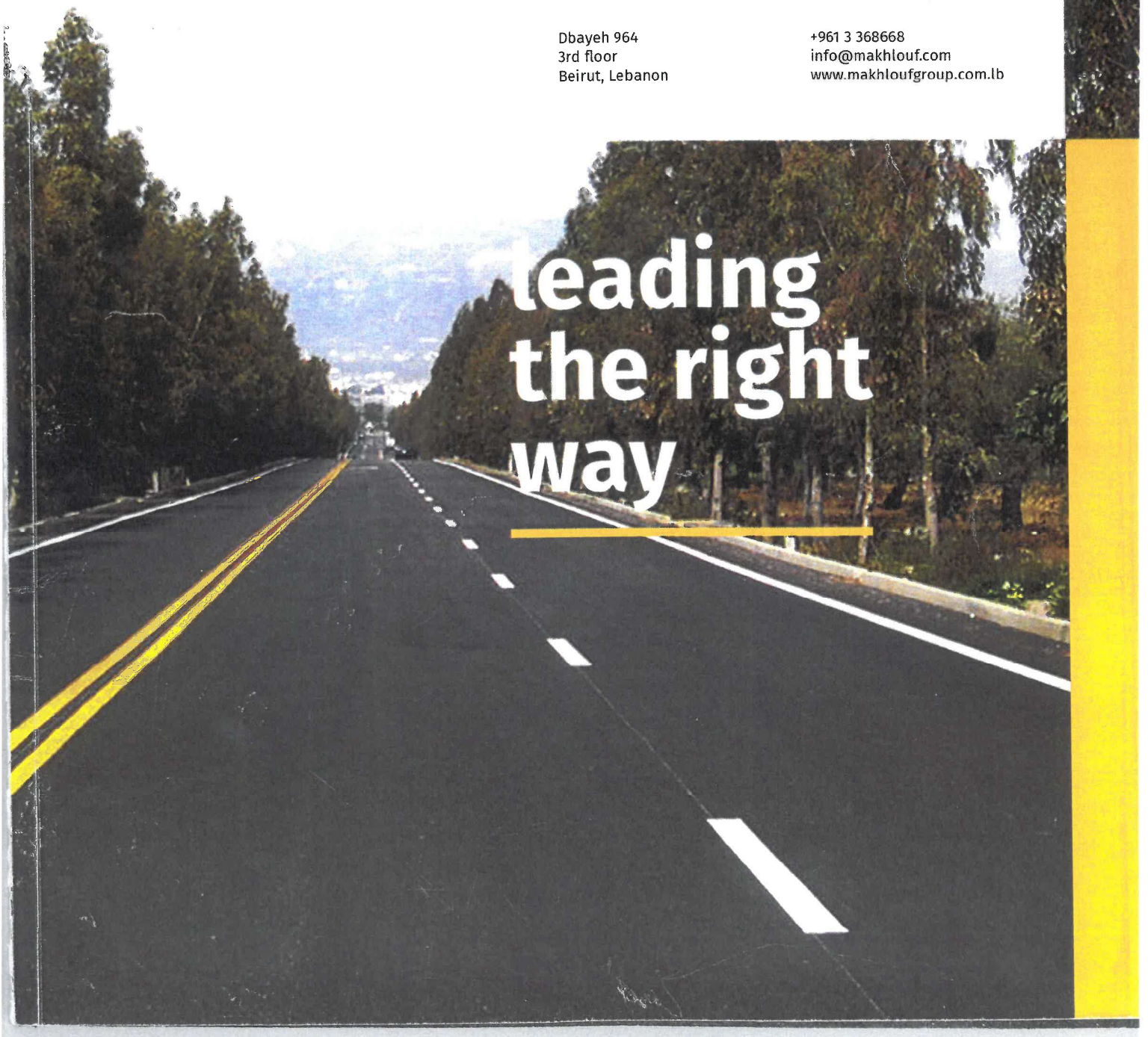
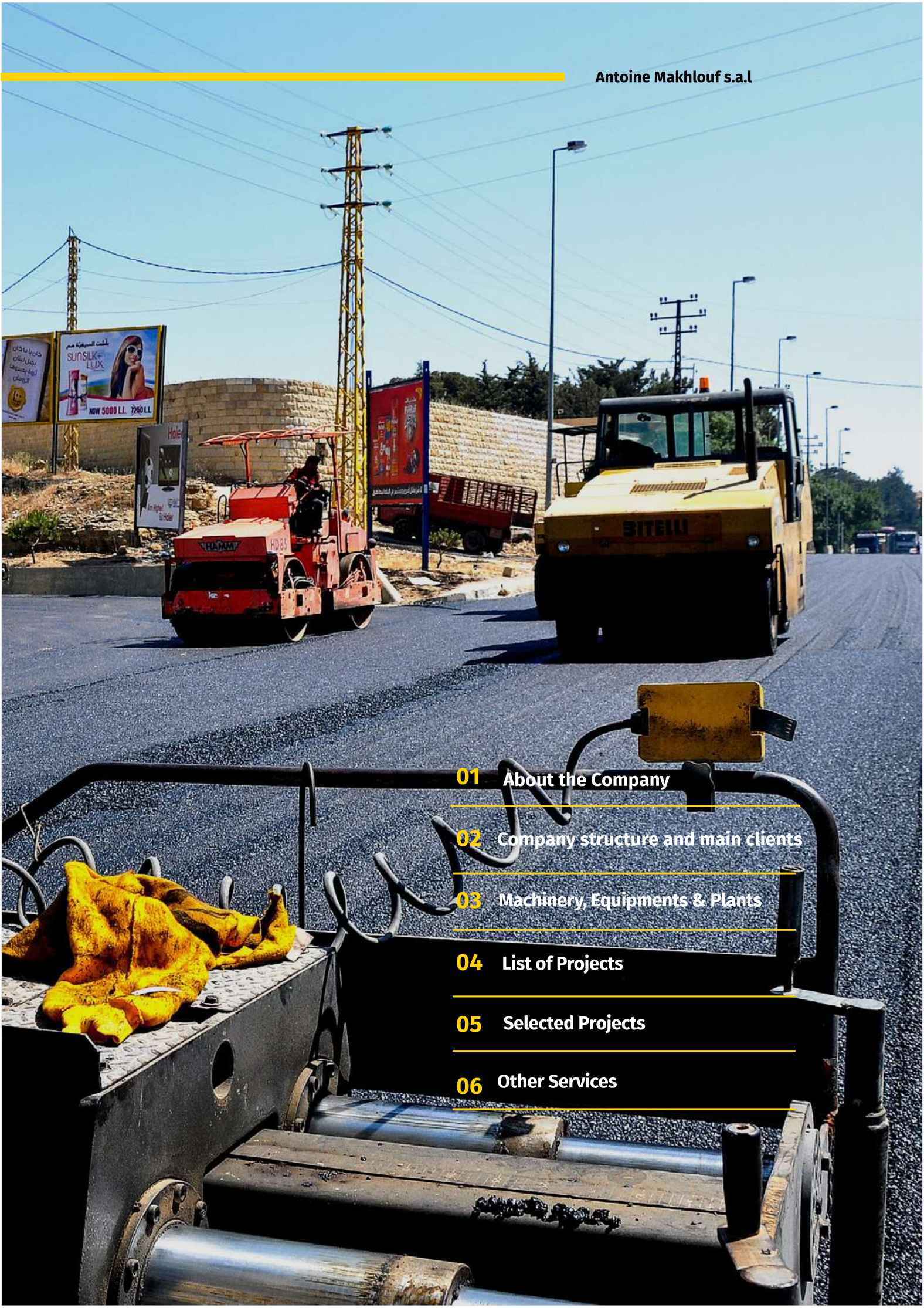




A word from our Chairman

For the past five decades, Antoine Makhlouf for Trading and Contracting s.a.l has a proven track record for delivering high quality large scale projects safely to time and budget.

We grew to provide superior and comprehensive engineering services to our Clients.
Our company values in the highly motivated, competent, industry-leading and safety-oriented professionals.

Our goal is to be an unstoppable company that meets the clients target and delivers par excellence, quality and turn key solutions.

We thank the clients we have served for the past 50 years and especially their trust in us and look forward to more encounters for more exciting and promising opportunities.

Antoine Makhlouf
Chairman

A word from our CEO

As I look over the growth of the independent, privately owned family company, I am very proud of what we have achieved so far, yet extremely excited for the promising future.

Our culture is far-removed from any introverted logic, and is very much about building solid relationships with the clients based on integrity, values, performance and high quality standards.

On behalf of this large growing group of talented, hard working, dedicated and passionate individuals, we aim to continueour impressive achievement & our contribution to the development of our communities.

Roger Makhlouf
CEO

About the Company

Spend too much time reflecting on the past and you could jeopardize your future. Ignore the past and you could loose your sense of direction. The trick is to find the proper balance-to celebrate your heritage while focusing on the future. At Antoine Makhlouf For Trading and Contracting, our focus has always been on the future. What will client's need in upcoming years from now? How will we meet the expectations of our shareholders and employees? What resources do we need to carry out growth plans? What kind of company were we then? What kind of company are we now ? What kind of company will we be?

Incorporated in 1967, since its foundation, Antoine Makhlouf For Trading and Contracting is present in the construction of public roads and infrastructure, ranging from fitting out of existing roads to construction of newly designed roads, either roads, motorways or highways.

With the benefit of insight, we shudder to think about the millions of Tons of bituminous mixtures executed, the enormous amount of cubic meters of concrete used or the millions of cubic meters of excavated soil and rocks or embankments. Many years have gone by and Antoine Makhlouf For Trading and Contracting continues to compete in the front line, expanding its market, both domestic and international, with works abroad already, giving continuity to its know how and achievements anywhere in the world.

Apart from roads, civil, marine and infrastructure construction, Antoine Makhlouf For Trading and Contracting sal is also present, through subsidiaries, in auxiliary tasks such as production of aggregates or bituminous products, concrete, road markings, traffic signs and electrical works.

All in all, we are present and would like to continue being present in people's most important form of transport, and we hope this profile serves as an example of the jobs undertaken and gives a full picture of the company's sense of commitment, passion and professionalism.

our mission

To be second to none in Lebanon and the region in the construction of roads and infrastructure buildings development

our vision

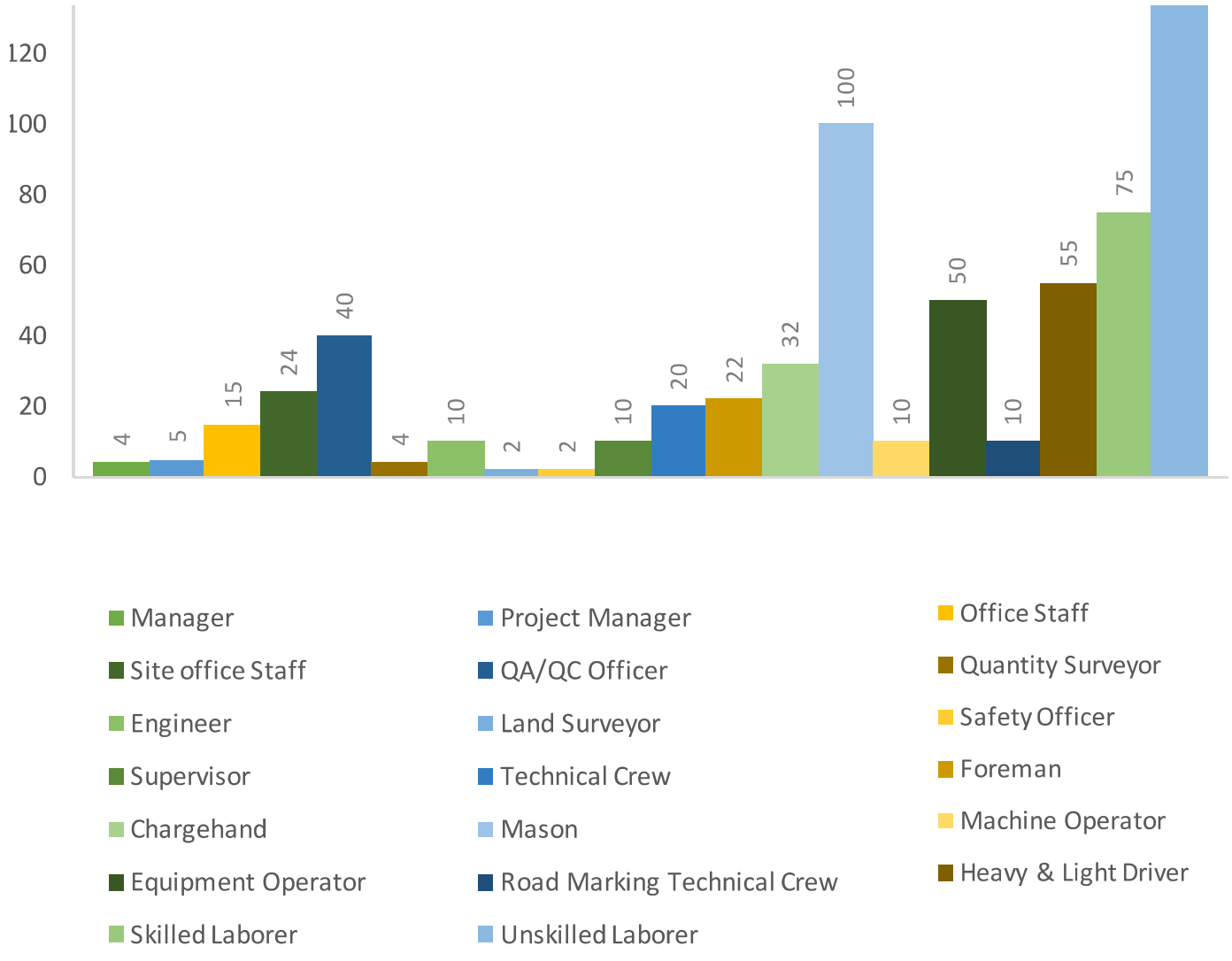
To achieve maximum growth and set a benchmark of excellence in all the projects undertaken

Activities & Scope of work

- Highway & Road Works
- Infrastructure Works
- Marine Works
- Supply
- Structure, Bridges, Tunnels and Buildings
- Cold In-place Recycling and Milling
- Slipform Pavement

Company Structure

Our team is composed of highly trained and experienced people who help us achieve our goals in delivering an optimum of services faithful to budget and timeline.



“The strength of the team is each individual member. The strength of each member is the team.”

Our clients

Our clients include a wide variety of businesses and positions across the country, including but not limited to the following:

Machinery, Equipments & Plant Resources

Over the 50 years, Antoine Makhlouf For Trading and Contracting sal have been the pioneers in purchasing and buying the best and most advanced equipment in the region.

EQUIPMENT

Track Excavator 30 -Ton	10	Air Compressor	10
Front Shovel	2	Tandem Vibratory roller	10
Track Loader	3	Smooth drum compactor	15
Hydro-Pneumatic Crawler Drill	3	Pneumatic Roller	10
Wheel Loader - 966	10	Asphalt Paver	6
Transit Mixer	15	Grader	5
Concrete pump	4	Cars + Pickups	50
Truck 20 -Ton	10	Milling machine	3
Truck 40 -Ton	6	Recycling train	1
Water Tanker	10	Slipform paver	1
Bitumen Tanker	4	Road Marking machine	2
Crane Truck / Tower Crane	4/2	Laboratory Instruments	1
Skid Loader	15	Electric Generator 60 Kva	10
Backhoe Loader	6	Electric Generator 500 Kva	5
Bulldozer	4	Electric Generator 100 Kv	10

MEJDLAYA CONCRETE & ASPHALT PLANT & LABORATORIES

The Mejdlaya plants are located in the Northern Part of Lebanon. The 20,000m2 facility is one of Makhlouf's three stationary production plants.

1. Production of Concrete and Mortar:

In this plant, it is possible to produce all types and grades of concrete ranging from Grade 5 for rolled concrete to Grade 70 for high durability concrete. There is a choice of possibilities to use admixtures to concrete to allow more time for placing concrete and its transportation up to a distance of 100-Km. Also available are the different types of concrete having properties specific to the structural purposes such as lightweight concrete, fiber reinforced concrete and sprayed concrete. Mortars are produced for masonry and plasterwork with the addition of a retarder as well as grouting materials. The concrete mixing plant has a capacity of 120m3/ hour.

2. Asphalt Plant:

The Asphalt Plant located in this plot is a stationary plant with a production of 240 Ton/hr, and a storage of 400 Ton of bitumen and emulsion plant to produce prime coats and tack coats.

3. Main Laboratory:

The Main Laboratory is used for geo-mechanical testing as well as for regular testing of concrete and asphalt materials.

Asphalt Plant:

BCHENINE PLANTS AND WAREHOUSES

The 30,000m2 facility includes the following;

- Concrete plant of 60m3/hr.
- Mobile asphalt plant 180 Ton/hr.
- Cutting and Bending of steel reinforcement with a capacity of 900 Ton/month.
- Production of reinforced concrete precast units, including curbs, manholes and fenders for roads and structural components for buildings subject to Employers' specifications.
- Mechanical and Sheet metal services for the needs of Plants and building sites.
- Transportation services.
- Formwork production.
- Central warehouse for storing materials and equipment and delivery to sites.
- Central workshop for all mechanical repair, denting painting, electrical workshop.

STORAGE FOR BITUMEN:

A tank farm of 5000 Ton is located in this facility.

CRUSHER PLANT

This is a quarry and a facility for producing aggregate materials located in the Northern slopes of Lebanon.

- All sizes of stone aggregates for concrete and asphalt, Sub base and Rockfill, produced by repeated crushing of a hard stone, screening and dust removing. Continuous quality control of aggregates is provided during the production for furnishing the required test certificates.

MOBILE ASPHALT PLANT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List of Projects

COMPLETED PROJECTS

CDR: Council for Development and Reconstruction

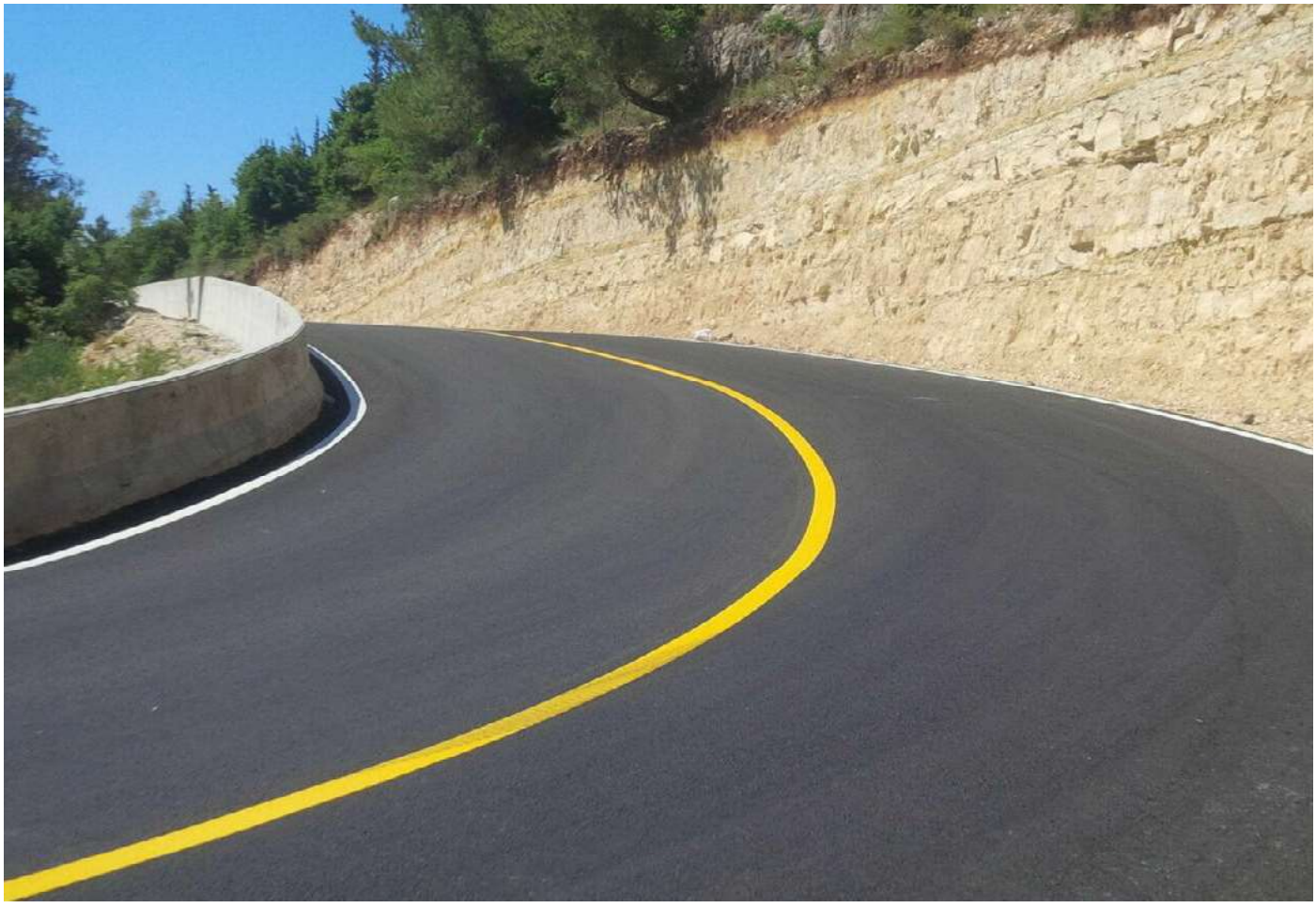
BM: Beirut Municipality

MPWT: Ministry of Public Works and Transportation

MG: Makhlouf Group

Project Name	Contract Value (USD)	Client	Completion Date
Highways, Bridges and Roads Projects			
Karabach-Zgharta Road (With Karabach Bridge Link)	2,755,713.33	MPWT	December 2018
AL Mekhadaa-Merdashiyi Road	1,018,770.67	MPWT	December 2018
Rachiine- Verdo Road	542,264.67	MPWT	November 2018
Saint Antonios-Kozhaya Road	537,470.00	MPWT	September 2018
Kfarhazir-Aaba Road Road	2,194,267.33	MPWT	August 2018
Ejbee-Basloukit Road	598,116.67	MPWT	November 2017
Zgharta Road Improvement (2017)	4,100,000.00	MPWT	November 2017
Torza – Ehden	2,000,000.00	MPWT	June 2017
Mejdlaya Road	1,000,000.00	MPWT	June 2017
Repair Works Of Naher Beirut Bridge and Highway	4,124,931.23	CDR	December2016
Northern Beirut Entrance-Charles Helou Highway	8,971,076.22	CDR	November2016
Kfarhata-Qarabach Bypass (Phase 1)	2,642,691.66	MPWT	June2016
Bchenata-Sawaki Road	5,825,874.67	MPWT	March2017
Saoufar – Mdeirej Highway Reinstatement Works for the Highway and Grand Hotel Viaduct	4,653,412.75	CDR	November2013
Abboudieh-Menjez-road	17,487,928.33	CDR	August2012
Adma Interchange	2,640,529.76	CDR	April2012
Annaya Ehmej Laklouk Road	15,688,307.37	MPWT	February2012
Tabarja - Dora Highway	24,473,278.05	CDR	August2010
Rehabilita`on of Chekka Tunnel	4,343,515.32	CDR	November2008
Zouk Mosbeh- Faraya Road	6,227,162.01	CDR	September2008
Sir El Dannyeh Jbab El Homr Road	18,124,359.44	CDR	April2008
Rehabilita`on Of Mafrak Homs-Arida Road	6,640,975.22	CDR	August2007
Tabarja- Chekka Highway	26,317,170.66	CDR	January2006
Bahsas-Mina Highway	3,831,762.18	CDR	January2006
Halba-Qoubayat Road & Bridges	11,724,661.00	CDR	November2005
Tripoli Maintenance Road	3,350,968.00	MPWT	January2003
Zgharta-Rashifa Road	5,839,950.00	CDR	July1999
Khalde- Damour Highway	6,379,986.76	CDR	July1998
Kousba-tourza Road	1,621,306.80	MPWT	April1997
Chekka-tripoli Highway, Abou Halka Viaduct	21,134,769.63	CDR	August1996
Koura Maintenance Roads	1,873,000.00	MPWT	1994
Tripoli Maintenance Roads	23,222,000.00	MPWT	June1991
Araman - Abdeh Highway	12,101,000.00	CDR	1991
Bsarma- Kfaraaqa Road	938,000.00	MPWT	1990

Project Name	Contract Value (USD)	Client	Completion Date
Akkar Maintenance Roads	2,412,000.00	MPWT	1990
Chekka-kfarhazir Road	10,684,000.00	MPWT	1980-1982
Maintenance Road Works in Beirut Municipality	6,163,706.67	BM	April2014
Street Lighting Works for Beirut Municipality	1,113,515.70	BM	August2013
Monte Verde Roads Reinstatements	4,076,923.83	MPWT	June2012
Public & Civil Building			
Rehabilitation of Saint George's Cathedral Ehden	1,021,863.33	HIGH RELIEF	
ADMA Residence- 550 Building	4,200,000.00	MG	May2013
Mejdlaya Asphalt & Concrete Batching Plant	4,000,000.	MG	October2012
Makhlouf Workshop & Offices- Bchenine	3,500,000.00	MG	1997
Residential Villa-Ehden	2,500,000.00	MG	1995
InternaMonal Security Force Building	3,000,000.00	MPWT	1993
Infrastructure Works			
Nahr Ibrahim- Jbeil Portable Water Line and Basin	1,979,925.75	CDR	September2004
Tripoli- El Mina Gardens & Sewage Lifting Station	10,150,027.90	CDR	October2003
Strom Water Collector OH 46	332,757.00	CDR	February1998
Marine Works			
Al-Abdeh Fishing Boat Harbor	2,250,000.00	MPWT	1990



ONGOING PROJECTS

CDR: Council for Development and Reconstruction

BM: Beirut Municipality

MPWT: Ministry of Public Works and Transportation

MG: Makhlouf Group

Project Name	Contract Value (USD)	Client
Highways, Bridges and Roads Projects		
Meziara Land Improvement	3,000,000.00	MG
Kfarhata-Salam Stadium Road	3,034,186.67	MPWT
Zgharta Roads Improvements	15,220,244.90	MPWT
Rehabilitation of Mar Elias Street, Beirut	751,000.00	BM
Road Marking Municipality	225,193.63	MPWT
Construction of Kfarnabrakh Wadi Set	1,306,048.00	BM
Road Improvement in Karantina, Beirut	2,536,000.00	BM
Road Improvement in Beirut District	2,853,976.00	BM
Road Improvement in Ras Al Naba, Mazraa, Beirut	2,919,866.00	BM
Maintenance of Street Lighting in Beirut Municipality	1,113,515.00	BM
Salim Salam Bridge	8,804,237.65	BM
St. Thereze Qartaba	3,047,204.46	MPWT
Rehabilitation of North Highway Section Badawi Syrian Borders	6,633,495.85	MPWT
Burj Al Yahoudiyeh Hrayqis	1,388,982.64	MPWT
Meniye Azqi	8,146,275.29	MPWT
Debaal Qaabit Road	6,917,846.36	MPWT
Rehabilitation of Street Lighting Network in Beirut	681,118.00	BM
Public & Civil Building		
Meziara Residence	1,500,000.00	MG
Rehabilitation of Beirut Justice Palace	20,635,246.13	MPWT
Construction of Field Hospital in Kaskas	1,824,200.00	BM
Rehabilitation of Maten Prison	3,769,000.00	LEBANESE GENERAL SECURITY
Marine Works		
Rehabilitation and Maintenance of Enfeh Fisherman Port	2,662,000.00	MPWT

SIR EL DANNIYEH JBAL EL HOMR ROAD

Client: *Council For Development And Reconstruction*
Location: *Sir El Dannyeh To Jbab El Homr Hermel Bekaa, North Lebanon*
Value usd ($) : *18,124,359.44*

The works include the construction of 28Km long of completely new roads and the Rehabilitation of a 9.5Km long of existing road. The roadways section consists of a 7m wide pavement with a 1m shoulder on each side.

The first section of this road passes by the village of Nabaa Al Sukkar, Brisa, Jbal Al Homer the ending point of this section. The total length of this section is approximately 25Km, and the alignment crosses a mountainous terrain.

The second section begins at Jbal Al Homer and ends at the road to Hermel village in the Bekaa Valley. The total length of this section is approximately 3.2Km.
The alignment crosses also a mountainous terrain.

The third section is a link section between Sir el Danniyeh village, and the beginning of the project at Nabaa Al Sukkar. The total length of this section is approximately 9.5Km. The alignment crosses a hard mountainous area and the land use is in majority agricultural.

Main Activities

- Site and geotechnical investigation (existing utilities, boreholes at Culvert and retaining walls locations).
- Excavation of top soil and the open excavations accounted for 1,427,000m3, filling 100,000m3, The excavations were the most complex part of the works because they involved blasting first in order to level the ground and enable an approach for the bulldozers. The machinery used for excavation included excavators, bulldozers, articulated Dump trucks. Filling was carried out by bulldozers and vibrating rollers with capacities of 15 and 10 Ton.
- The road base works accounted for 232,900m3 and two Asphalt Pavement layer (75,000 Ton).
- Laying reinforced concrete pipes.
- 5,500m of New Jersey Barrier type fencing were fixed.
- Construction of Gabion Walls and Geogrid Walls.
- 60 Culvert, concrete ditches for storm water drainage network (in total 5,500m3 of reinforced concrete with 450Ton of steel reinforcement.
- Protection works (slope protection, drainage ditch, grouted riprap).
- Utilities works and relocation of existing utilities.
- Road accessories: Guard rails, signing and marking.

Repair works of Naher Beirut Bridge and Highway

Client: *Council for Development and Reconstruction*

Location: *Beirut*

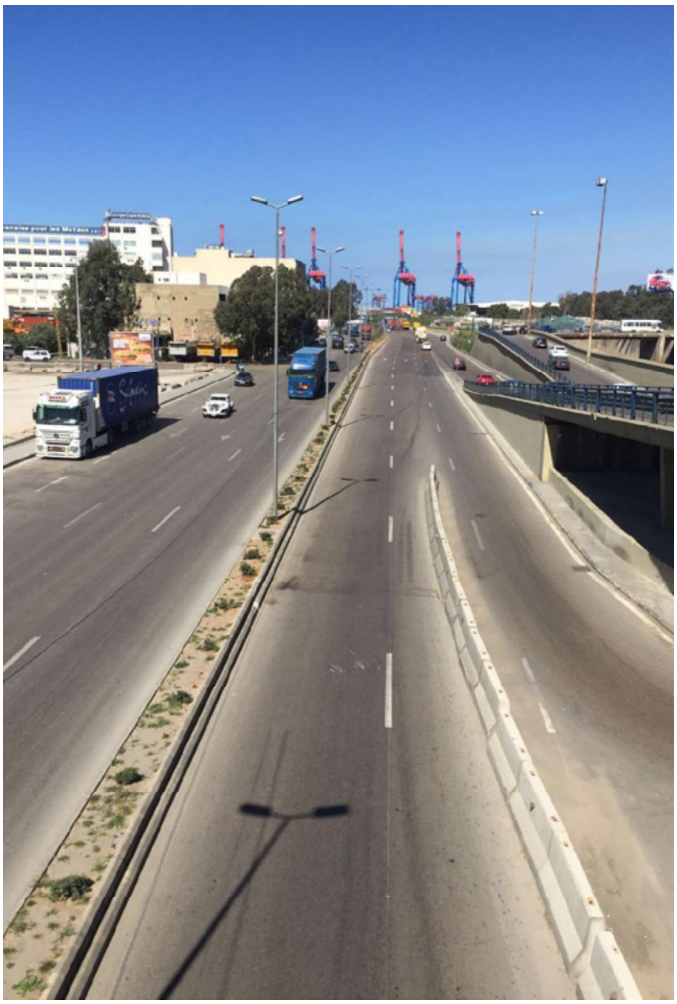
Value usd ($) : *4,124,931.23*

Lowering the road level under Naher Beirut Bridge. Demolition of existing triple cell culvert and lowering the concrete leve and execution of new double cell culvert length 400lm, and all related road works.

Main Activities

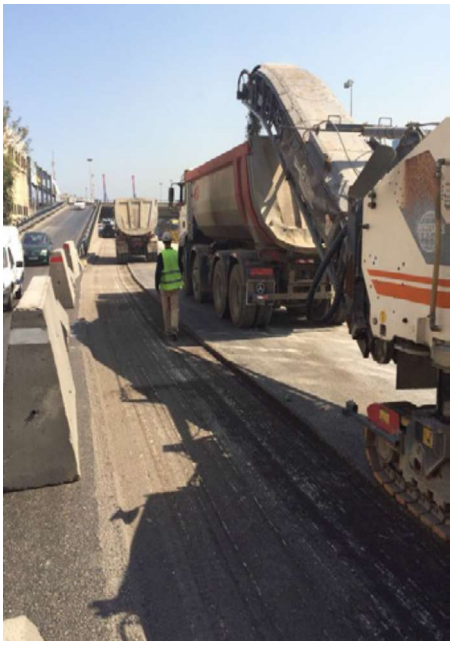
- Excavation 24,496m3.
- Base course 6,182m3.
- Wearing course 6,074m3.
- Concrete 5,360m3.
- Steel 840 Ton.
- Carbon fiber 120lm.
- Curbstones 6,400lm.
- Tiling 5,500lm.

Before



After

Demolition of existing box culvert

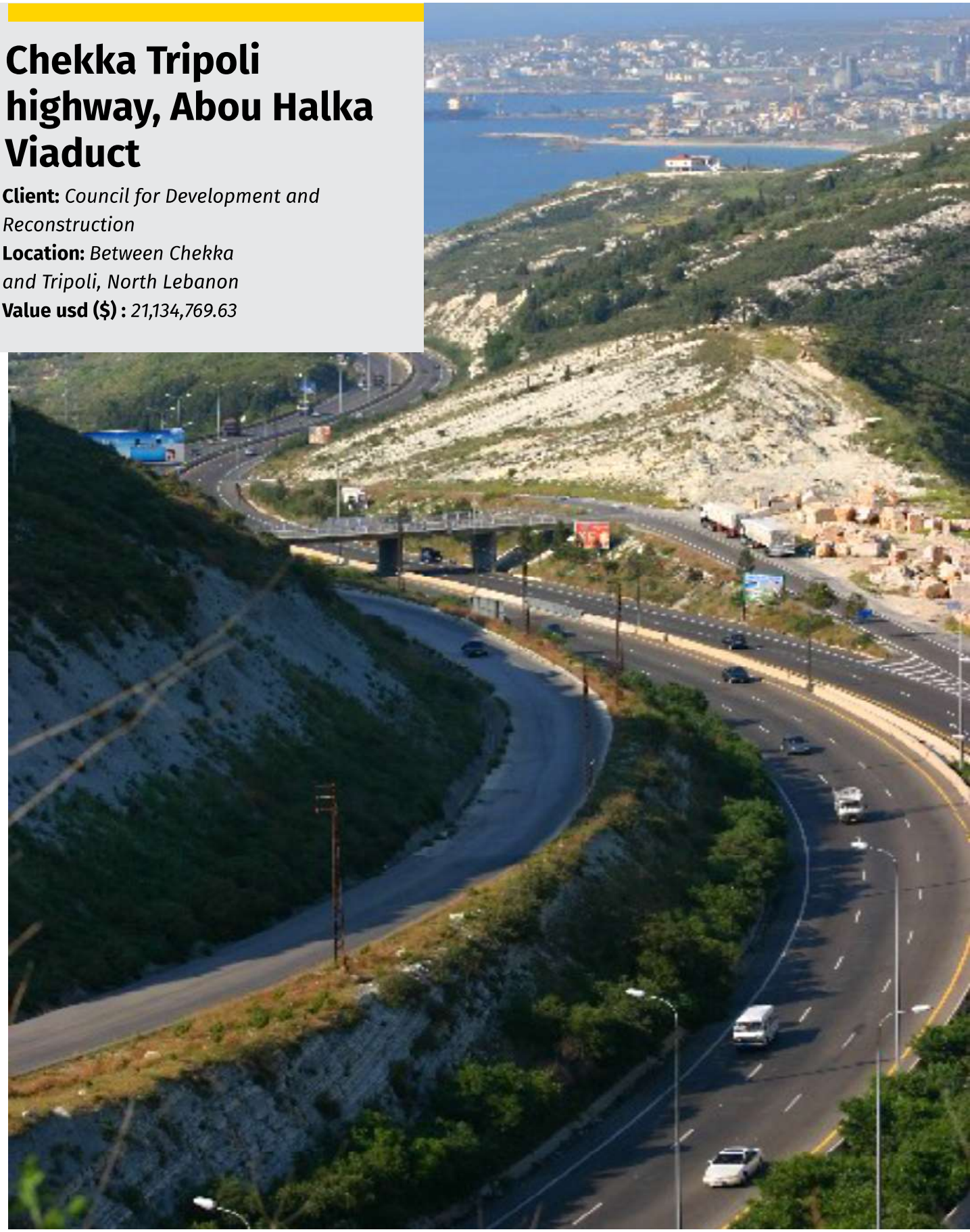


Asphalt-milling

Concreting of boxculvert top slab

Chekka Tripoli highway, Abou Halka Viaduct

Client: *Council for Development and Reconstruction*
Location: *Between Chekka and Tripoli, North Lebanon*
Value usd ($) : *21,134,769.63*



The works include the construction of a 15.4Km length of highway Between Chekka and Tripoli North Lebanon. It's the 3rd section of the Tabarja Tripoli highway in addition to the interchange and the boulevard of Bahsas at the South Entrance of Tripoli.
The Construction of Abou Halka Viaduct was assigned under the contract for the construction of Chekka Tripoli Highway.

The Construction of Abou HALKA viaduct was assigned under the contract for construction Chekka Tripoli Highway.

The cast in situ post tension dual carriage way viaduct is 100m long and 11.75m wide. It is comprised of two traffic lanes 3.50m wide each along with the sidewalk 0.80m wide. The viaduct is laid on 14 columns (the highest being of 10m) with centering at 30m and two abutments.

The roadways section consists of 2 ways 15m wide each: an inner verge of 1.30m, 3 road lane of 11.10m wide with a 2.60 m shoulder on the right side.

This section of the Highway begins at Chekka Interchange, passes by Enfeh, Qalamoun reaching Bahsas Interchange (which is the ending point of this section). The total length of this section is approximately 15.40Km, and the alignment crosses a gently sloping terrain.

In addition,the Boulevard of Bahsas links the Coastal Road of Al Mina to the Southern Entrance of Tripoli via the Bahsas Interchange. The length of this section is 500m.

Main Activities:

- Earthworks 932,000m3.
- Granular sub-base 200,000m3.
- Asphalt works 195,000 Ton.
- Concrete works 300,000m3 and reinforcing steel to 2,500 Ton.

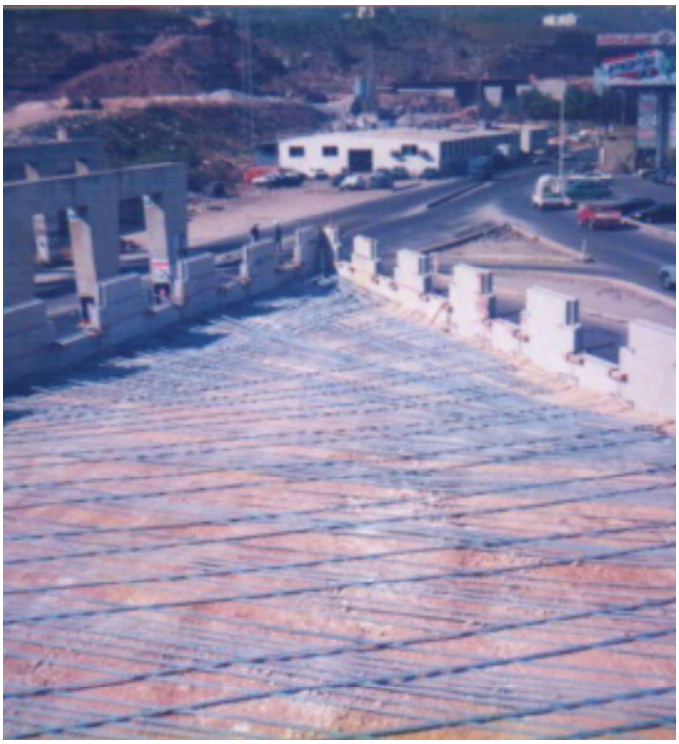
The extent of the works includes the following main elements:

Site and geotechnical investigation (existing utilities, boreholes at Bridges, Structures, Culvert and retaining walls locations).

Earthworks (1,298,377m3) for road construction, structures, drainage channels, culverts, bridges, walls, etc...

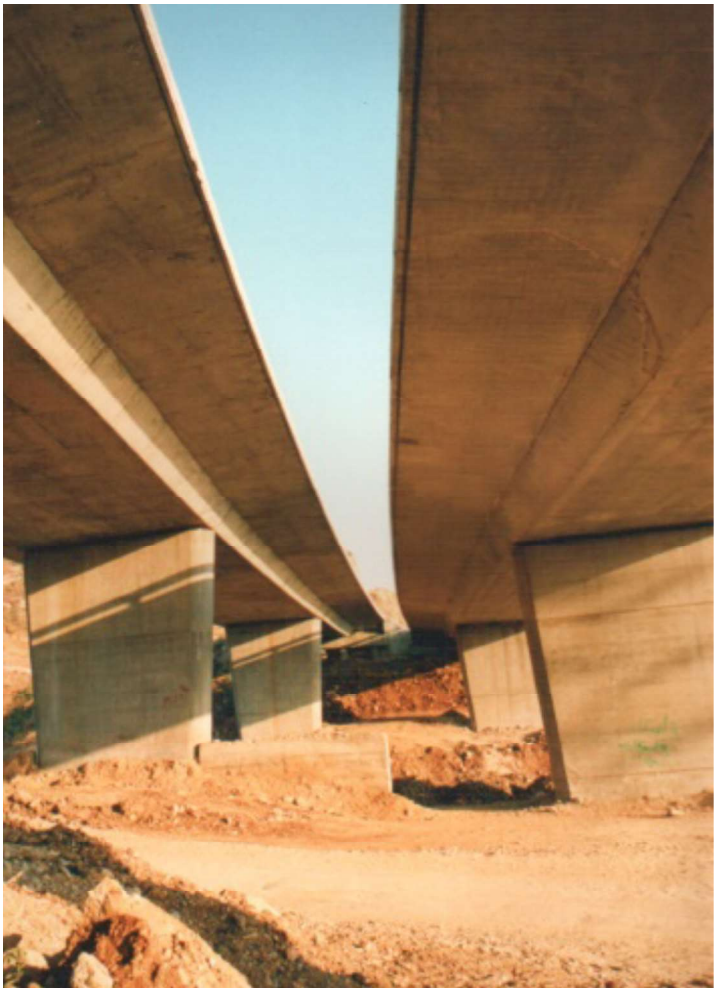
Road Structure works including:

- Sub-base and base course layers (181,749m3).
- Two Asphalt Pavement layer (203,601 Ton).
- Construction of 6 overpass bridges of 40m length each, 1 underpass bridge of 66m length, 1 overage exceptional of 101m length, 2x 15m wide (in total: 16342m3 of reinforced concrete with 1,401,175 Kg of steel reinforcement and 1477,190 Ton of pre-stressed reinforcement).
- Construction of box and pipe Culvert (10,386 lm), 20,403 lm of porous drain, 25,906 lm of concrete ditches for Storm water drainage network. Construction of 2,755m2 of reinforced earth Walls (in total 45,123m3 of selected fill with 53,518m of armature).
- Protection works (slope protection, drainage ditch, grouted riprap).
- Street Lighting works.
- Utilities works and relocation of existing utilities.
- Road and bridges accessories: 14 Km of New Jersey Barrier, Guard rails, signing and marking.



Construction of Reinforced Earth Wall

Installation Of Reinforced Earth Wall Panels

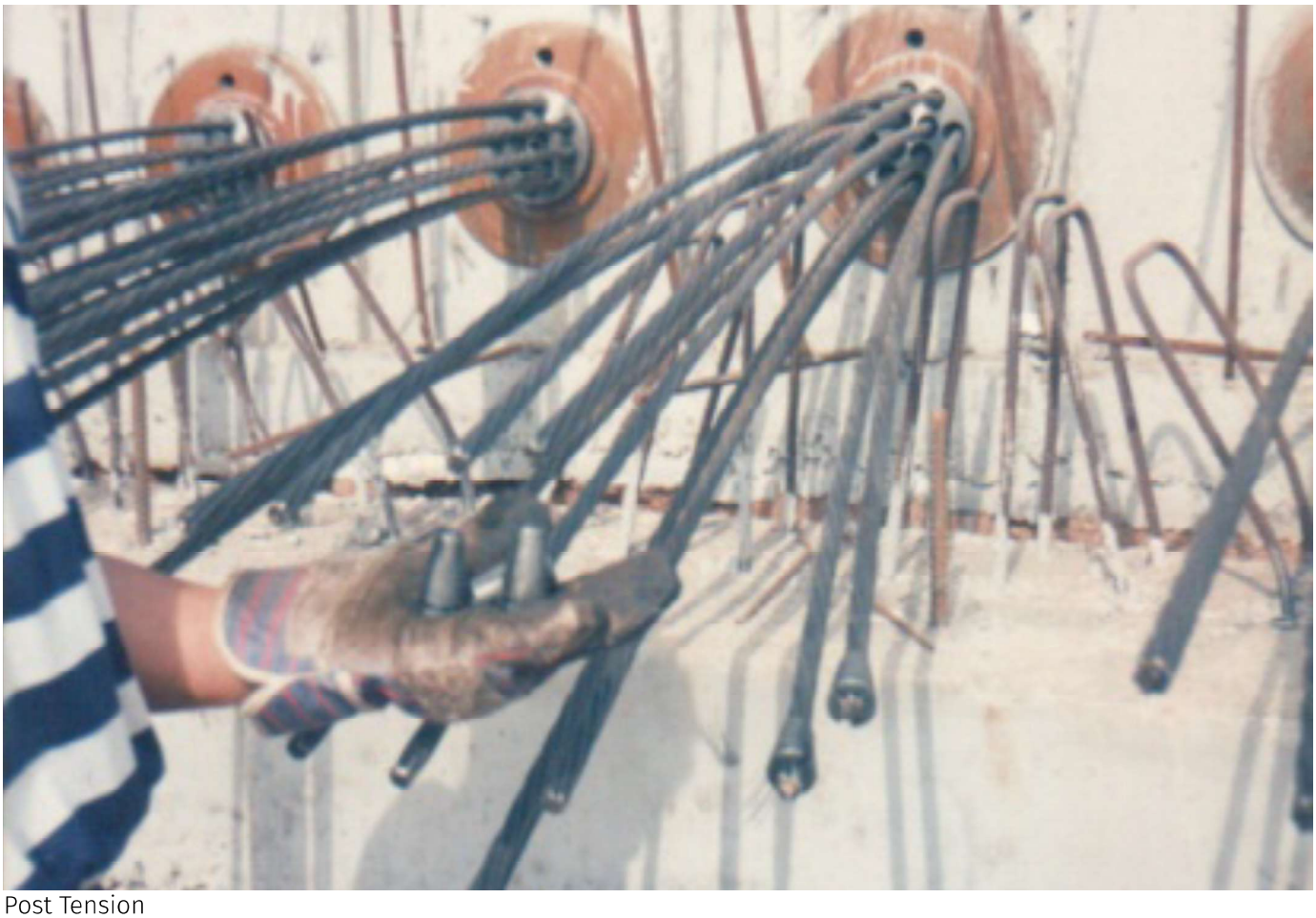


Over Pass Bridge

Construction Of Bridge Deck

Construction Of Over Pass Bridge

Bridge Pier



Post Tension

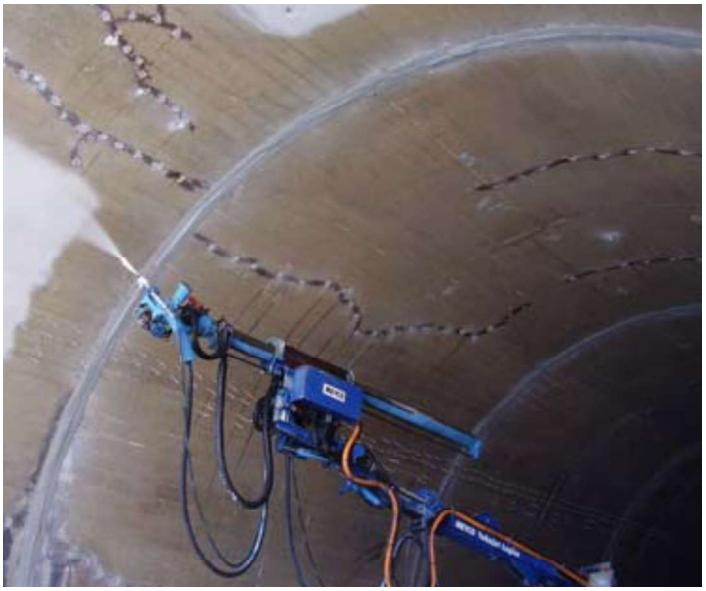
Road final shape - Steel guard rail - Wearing course - Edge marking yellow line

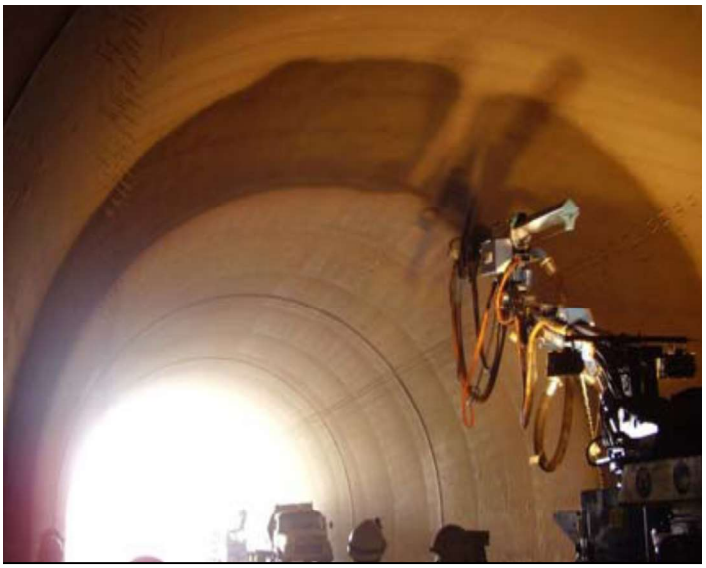
REHABILITATION OF CHEKKA TUNNEL

Client: *Council for Development and Reconstruction*

Location: *Northen Lebanon*

Value usd ($) : *21,134,769.63*





The Chekka Road Tunnel was constructed in 1977 and comprises two parallel tubes accommodating three traffic lanes each. Each tube is 400m long and 9m wide, having an internal diameter of 12m.

The works are subdivided into following:

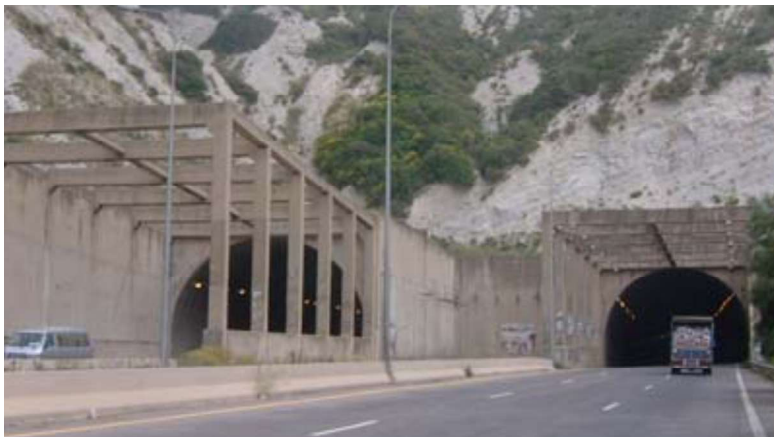
- Exterior and Interior surface repair: A total surface of almost 18,500m2 constituting of two shells and four frames as well as an external surface which is rehabilitated as follows:
  - Internal scaffolding
  - Ultra high pressure water jet of all surfaces
  - Cracks sealing and injection by epoxy resin with special pumps
  - Removal of deteriorated concrete and replacing it by reinforced mortar
  - Curing reinforcement by an anti-corrosion
  - Protecting the cleaned and repaired surface by a spray able waterproofing membrane master seal-345
- Construction of internal shotcrete jacket and a waterproofing membrane
- Local concrete repair and construction joints repair
- Slope stabilization
- Water basin and drainage channels
- Tunnel street lighting and traffic safety

The Challenge

The original refurbishment design and the tender documents called for a PVC sheet membrane for waterproofing and a final inner lining of 25cm of cast-insitu concrete.

This would impose a reduction of the interior tunnel profile, unless the original concrete lining was demolished. This would impose a technically difficult solution to implement as well as create a long construction programme.

For this reason the main contractor for the refurbishment was interested in considering an alternative technical solution which was both cost-effective and time saving.



The Results

The composite liner with the sprayable membrane proved to be a successful waterproofing system for this project. Fast and cost-effective application, as well as a precise membrane thickness and product consumption were achieved.

One of the main experiences gained was the high speed of application without compromising quality issues like consistent membrane thickness as well as safe and convenient working conditions.

The use of the same spraying robot for the waterproofing membrane and the sprayed concrete proved successful.

The UGS Solution

BASF UGC proposed the use of the sprayable waterproofing membrane MASTERSEAL® 345 in a sandwich structure between the original cast concrete and a new inner lining based on fibre reinforced sprayed.

The inner lining of sprayed concrete had a thickness of 4cm and was applied as a separate operation after installation of the sprayable waterproofing membrane.
The membrane was applied in the entire tunnel profile including the walls and the crown.
For aesthetic reasons a float finish of the sprayed concrete surface was carried out and tiles were applied to the walls up to the lighting level

ABBOUDIEH MOUNJEZ ROAD

Client: *Council for Development and Reconstruction*

Location: Akkar North Lebanon

Value usd ($) : *17,487,928.33*

The works for the Road include the construction of 14 km length of road works. The roadways section consists of 7.0 m wide pavement with 0.25 m inner verge from each side and 1.50m shoulder on each side.

The first section of this road passes by the villages of Abboudieh, Janine and Noura El Tahta village. It also has a bridge structure. The total length of this section is approximately 7Km, and the alignment crosses a mountainous terrain. The land use is in majority agricultural.

The second section begins at Noura El Tahta intersection and ends at El Dabbabieh village. The total length of this section is approximately 3.5Km. The third section begins at El Dabbabieh village, it passes through El Fraidis and ends at El Mounjez village. The total length of this section is approximately 3.5Km. The alignment crosses a hard mountainous area and the land use is in majority semi-urban.

Road Works Include:

- Site and geotechnical investigation (existing utilities, boreholes at bridges and retaining walls locations).
- Earthworks (625,000m3) for road construction, road widening, drainage channels, culverts, bridges, walls, etc.
- Sub-base and base course layers (106,000 m3)
- Two Asphalt Pavement layer (52,000 Ton).
  Construction of retaining walls, Culverts, 4 bridges, Concrete ditches for Storm water drainage network (in total: 25,085m3 of reinforced concrete with 2,500 Ton of steel reinforcement).
- Protection works (slope protection, drainage ditch, grouted riprap).
- Utilities works and relocation of existing utilities.
- Lighting works at intersections.
- Road accessories: New Jersey Barrier, signing and marking.

ADMA RESIDENCE – 550 BUILDING

Client: *Adma Residence – 550 Building*

Location: Adma

Value usd ($) : *4,200,000.00*

ADMA 550 is located in quiet street within the Adma luxurious neighborhood, 3 minutes away from the Tripoli-Beirut highway.

Discreet, elegant in its modern facades; ADMA 550 holds only one apartment per floor with a 3.25m under ceiling height, those apartments are ranging from 300 to 500m2 including, salons, dining room and living room open to the Mediterranean sea.

The building consists of a basement, ground floor, four upper floors and attics. Each apartment has a full kitchen with logia, storage room and maids room, in addition to three master bedrooms with full bathrooms, two of them open to the evergreen Lebanese mountain and the main master bedroom opens to the Mediterranean sea.

ADMA 550 services parking spaces (700m2), a boiler plant and one storage room for each apartment at the basement level.

Other services provided include backup power generator and round the clock security.

KHALDE-DAMOUR HIGHWAY

Client: *Executive Council for Major Projects (CEGP)*

Location: Dammour - Khalde

Value usd ($) : *6,379,986.00*

Performed Works

- Masonry walls.
- Construction of new jersey barriers.
- Installation of guard rails.
- Road marking.
- Traffic safety.
- Earthworks 100,000m3.
- Base Course 90,00m3.
- Asphalt works 31,500m3.
- Concrete works 10,000m3.

ANNAYA EHMEJ LAKLOUK ROAD

Client: *Ministry of Transporation and Public Works*

Location: Jbeil Lebanon

Value usd ($) : *15,388,308*

This project consists of the widening of a mountainous existing road with all related rock excavation, retaining walls, bridge execution and road construction.

This project is a road length 10Km, and a width of 12 lm.

The basic quantities included cement stabilization of 23,000 m3.

Bituminous base course (BNS) of 100,000m2 and the asphalt-wearing course of 135,000m2.

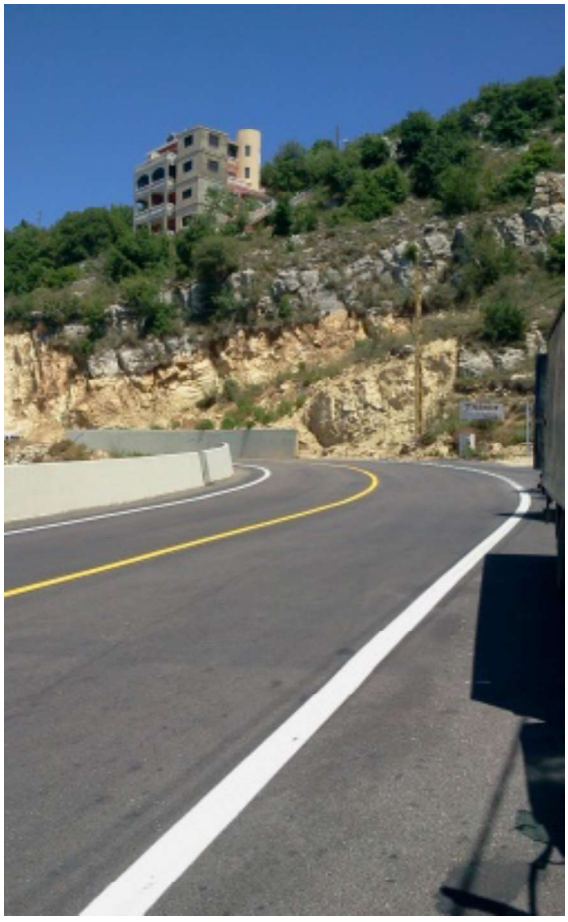
On locations where the embankment heights exceed 10m, 3m wide berms were constructed and protected with concrete and anchors to stabilize the sloping ground.

The overpass, spanning 64.80m, is 70.80m long and 11.20m wide bridge.

The carriageway.

Excavations accounted for 800m3, concreting 810m3 and reinforcing for 135 -Ton

Sub-base, base course and two bituminous layers.



Performed Works

- 27,000 m3 of Excavation in different type of soil.
- Paying pavement in full with
- Execution of storm water system including pipes and channels.
- Execution of water supply network all over the road.
- Execution of telephone civil works network.
- Electrical network.
- Execution of different height retaining walls from 2m to 13m.
- Execution of 200 lm bridge.
- Shot-crete and nails for slope stabilization.
- Signs and road marking.
- Ciment stabilization of 23,000m2

TABARJA CHEKKA HIGHWAY

Client: *Council for Development and Reconstruction*

Location: *Tabarja*

Value usd ($) : *26,317,170.66*

Performed works:

- Earth works.
- Earthworks 66,000m3.
- Base Course 77,500m3.
- Recycled area 665,000m2.
- Asphalt works 152,000m3.
- Concrete works 10,000m3.
- Construction of new jersey barriers (40 Km).
- Construction of a storm water drainage network.
- All kind of bridge finished works such as precast
- concrete parapets.
- Expansion joints.
- Rip rap walls.
- Safety barriers.
- Guard rails.
- Curbstones.
- Road marking.
- Overhead gantries.
- Traffic safety.

TABARJA DORA HIGHWAY & REPAIR OF GHAZIR BRIDGE

Client: *Council for Development and Reconstruction (CDR)*

Location: Beirut

Value usd ($) : *24,473,278.05*

Rehabilitation of 20 Km length highway average width of 24m along with execution of different infrastructure utilities

- Storm water.
- New Jersey barrier, guardrail.
- Retaining walls.
- Base course.
- Bituminous layers.
- Road marking.
- Sidewalks.

Bridge Repair:

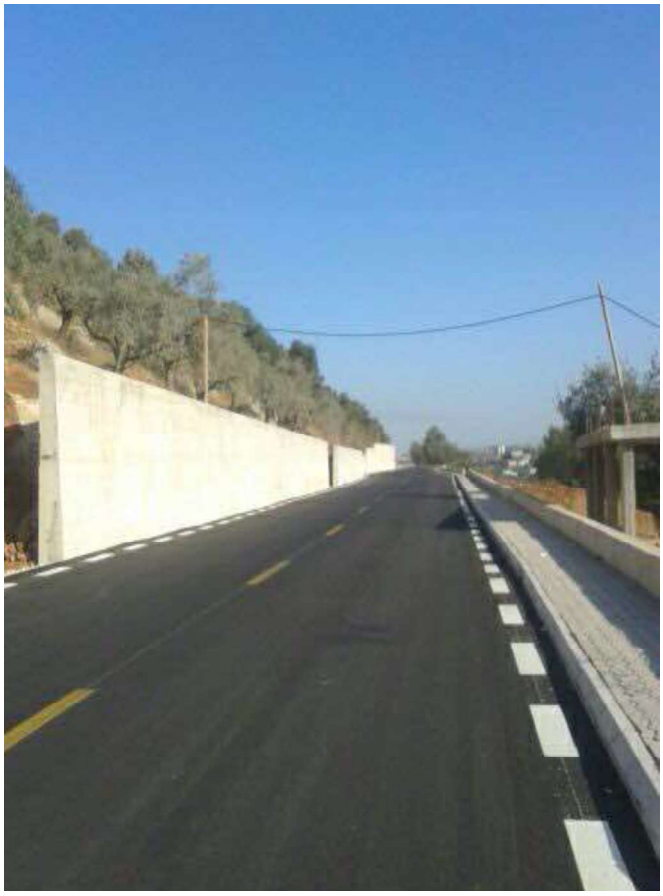
- Bridge expansion joints and lifting of Ghazir in order to change elastomeric pads bearing.
- Flat jacks to lift the 5000T structure.
- Replacement of elastomeric bearings – 36 Nos.
- Repair works and injection for cracks and deteriorated concrete.
- Application for anti-carbonation paint.

KFARHATA QARABACH ByPASS

Client: *Ministry of Public Work*

Location: Zgharta North Lebanon

Value usd ($) : *2,642,691.66*

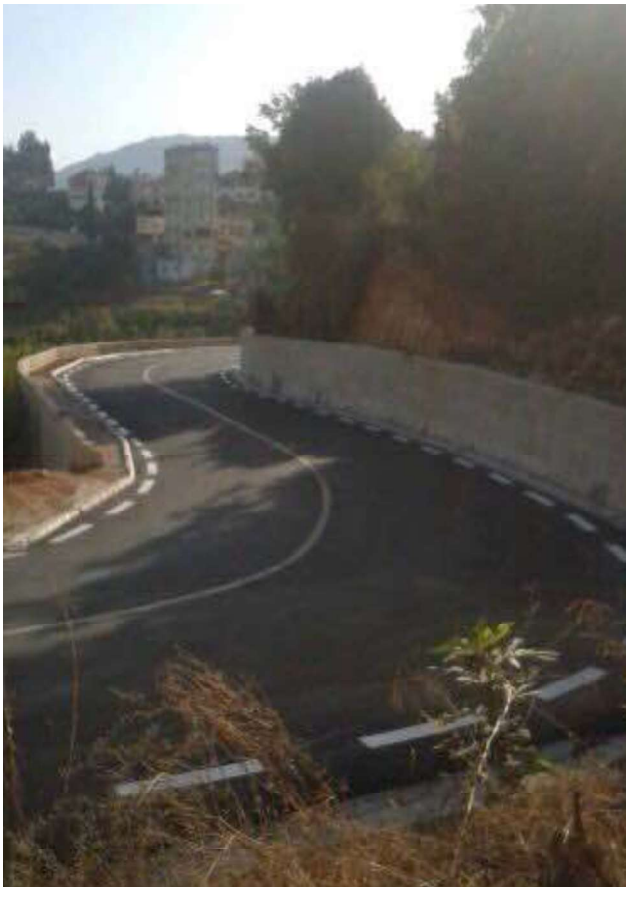


The works for the Bypass Road under Phase 1 include the construction of 1,200m length of two-way city road. The roadways section consists of a 7m wide pavement with a 0.25m verge from each side and 1.50m sidewalk on one side.

The extent of the works includes the following main elements:

- Site and geotechnical investigation (existing utilities, boreholes at bridges and retaining walls locations).
- Earthworks for road construction, road widening, drainage channels, culverts, bridges, walls (approximately 34,000m3).
- Sub-base and base course layers (4338m3)
- Two asphalt pavement layer involving both new pavement and
  rehabilitation of existing pavement (2,218 Ton)
- Construction of approximately 2000m length of retaining walls, 1 bridge, 1200lm. of concrete ditches for Storm water drainage network (7,810m3 of reinforced concrete with 822 Ton of steel reinforcement)
- Road accessories: sidewalks, signing and marking.

Before



After

ADMA INTERCHANGE

Client: *Council for Development and Reconstruction (CDR)*

Location: *Adma*

Value usd ($) : *2,640,529.76*

The works comprised:

- Excavations 2,540m3.
- Filling 3,120m3.
- Concreting 6,200m3.
- Reinforcement works 713 Ton.
  Waterproofing.
- Asphalt work and bridge-deck transition.
- Street lighting.
- Reinstatement of high voltage cables.
- Culverts.
- Landscaping works.

Girder Beam-Installation

Retaining Wall

Prime Coat Prior To Asphalt Binder Course Paving

Retaining Walls Foundations

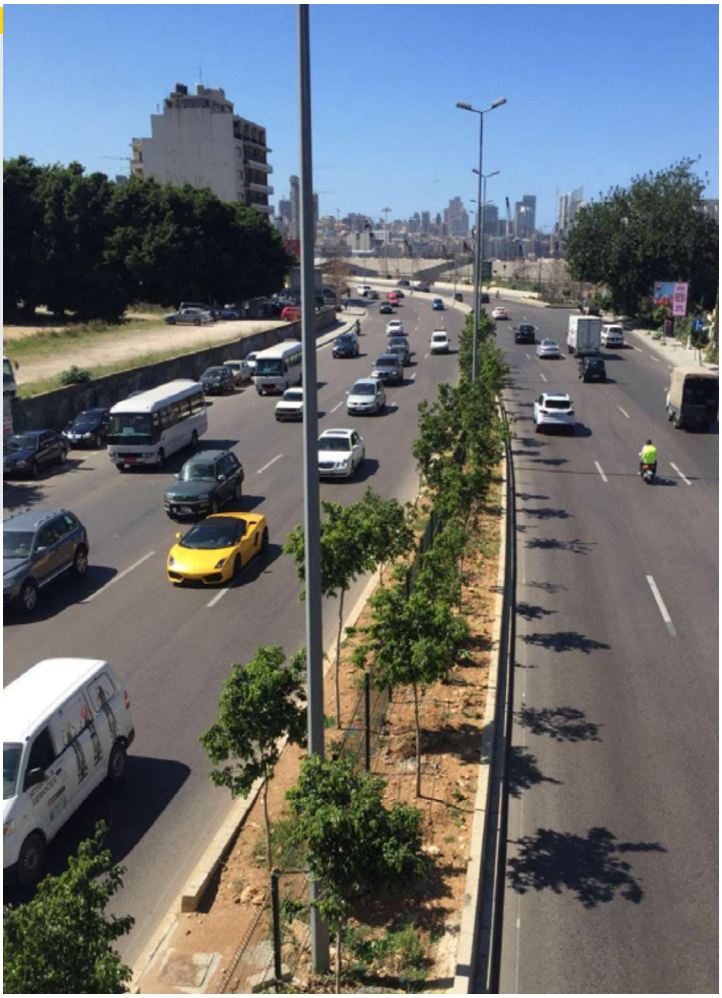
Prime Coat Prior To Asphalt Binder Course Paving

NORTHERN BEIRUT ENTRANCE – CHARLES HELOU

Client: *Council for Development and Reconstruction (CDR)*

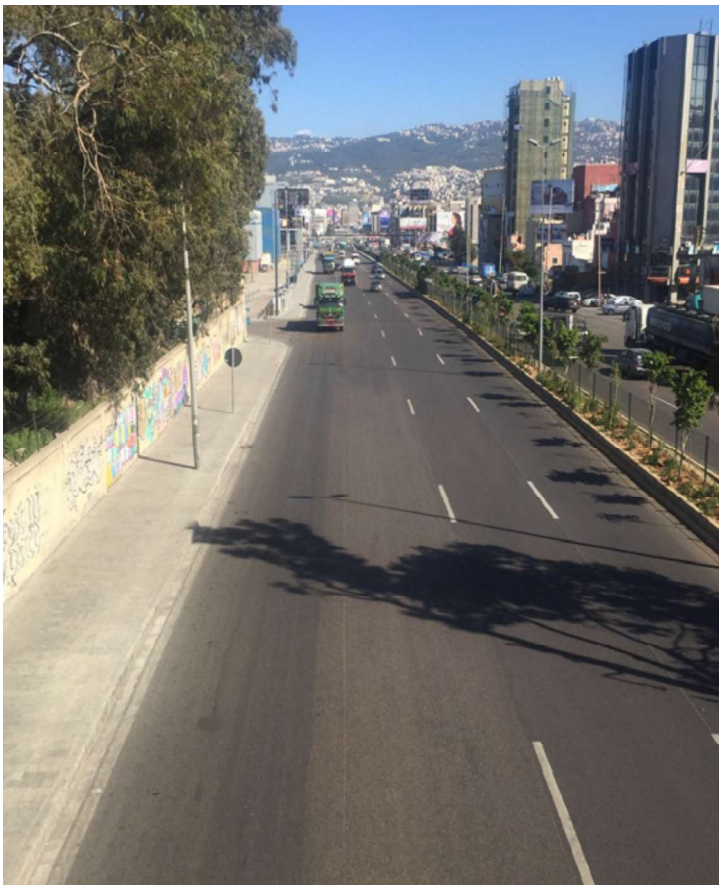
Location: Beirut

Value usd ($) : *8,971,076.22*



Performed Works

- Earthworks 38,000m3,
- Granular subbase 7600m3
- Asphalt works 41,000Ton
- Concrete works 1100m3 and reinforcing steel to 800Ton.
- Tiling 24000m2
- Reinforced soil walls structure
- Expansion joints: Replacement 720lm
- Movement rong 80mm
- Reflective studs 2600pcs
- Construction of a storm water drainage network
- Safety barriers 2800lm
- Guard rails
- Curbstones 18,000lm
- Road marking 3750m2
- Traffic safety



Mdeirej highway reinstatement works for the highway and grand hotel viaduct damaged by July 2006 war

- The highway is dual carriage way 3 lanes eac. Each 21m wide.
- Excavation.
- Milling 85,000m2.
- Road base 30,000m3.
- Asphalt works 17,500 Ton.

MDEIREJ HIGHWAY REINSTATEMENT

Client: *Council Of Development And Reconstruction*

Location: Saoufar

Value usd ($) : *4,653,412.75*

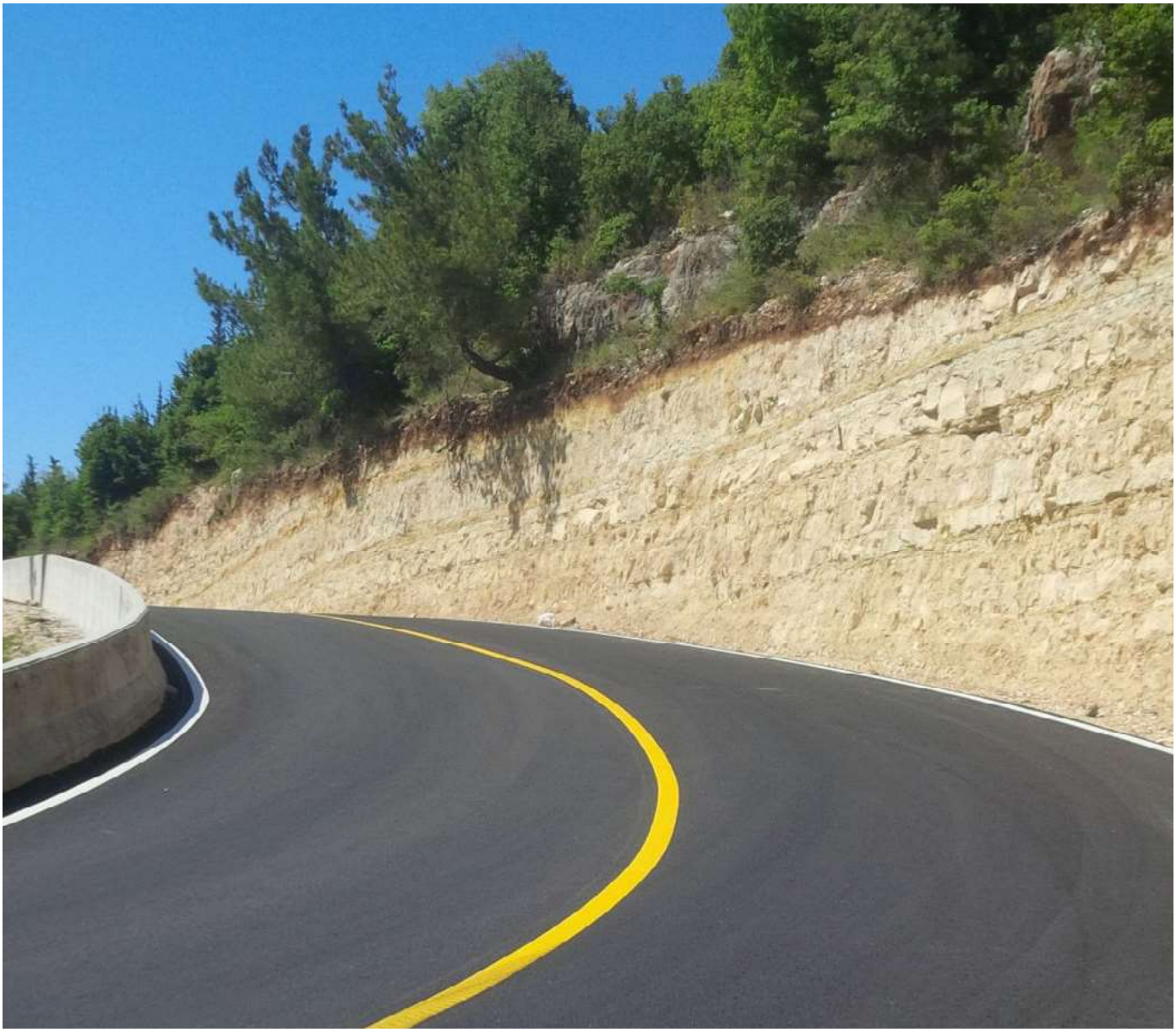
BCHENATA SAWAKI ROAD

Client: *Ministery Of Public Work*
Location: *Zgharta North Lebanon*
Value usd ($) : *5,825,874.67*

The works for the Road include the construction of 9.9Km length of two-way mountainous road.

The roadways section consists of 7.0m wide pavement with 0.25m verge from each side and 1.00m wide Channel on cut side, a single face New Jersey Barrier on the fill side.

The road passes by the villages of Behwaita, Bchenata and Sawaki.



Main activities

- Sub-base and base course layers (32000 m3).
- Two Asphalt Pavement layer (19200Ton). Construction of approximately 1000m length of retaining walls, 13 Culvert, 6200-lm of concrete ditches for Storm water drainage network (in total: 8974m3 of reinforced concrete with 744-Ton of steel reinforcement).
- Road accessories: 3500-lm of New Jersey Barrier, traffic signing and road marking.
- Site and geotechnical investigation (existing utilities, boreholes at retaining walls locations.
- Earthworks (200847m3) for road construction, road widening, drainage channels, culverts, walls.

HALBA-QOUBAYAT ROADS AND BRIDGES

Client: *Council for Development and Reconstruction*

Location: Beirut, Lebanon

Value usd ($) : *11,724,661.00*

The project consists of the widening and the improvements of the main road connecting the village of Halba to the mountainous village of Qobayat (North Lebanon).

Since the North side of Lebanon is a valley side of the country and the landslides appear almost invariably every winter season, especially after heavy rains, one of the major activity carried out in this project is stabilizing this hazardous portion.

Other major works comprised;

- Rehabilitation of 25Km road
- Construction of two bridges
- Realignment existing infrastructures

- New storm water drainage system
- Retaining wall gabion walls
- Reconstruction of base course layer using cold
- Sidewalks
- Street lighting,
- Pavement works
- Road marking
- Traffic safety
- Landslide / Piles

Main Activities:

- Earthworks 92,020m3
- Base Course 49,300m3
- Recycled area 150,000m2
- Asphalt works 33,125m3
- Concrete works 12,953m3

03

Ongoing Projects

REHABILITATION OF SAINT GEORGE'S CATHEDRAL EHDEN

Client: *Lebanese Republic High Relief Committee*

Location: *Ehden, North Lebanon*

Value usd ($) : *1,021,0863*

Renovation of the existing cathedral Residence covering a gross area of 725m2 and construction of an annex for clergymen with 3,736m2 of gross space. The works included other civil works, trades, installation and finishing works. The work organization was dictated by site constraints (the closest section of the city center, restricted spoil disposals and transports, close vicinity of historical and cultural heritage sites. Protection of the building pit involved the use of micro-pile support system).

Replacement of the church roof and renewal of the entire building structure with waterproofing included. All assigned works were performed under the supervision of a competent National Trust Office because the church is on the list of National Ancient Monuments.

Included in the assigned works were civil works, trades, installation and finishing works for this building covering a net area of approximately 2,500m2.

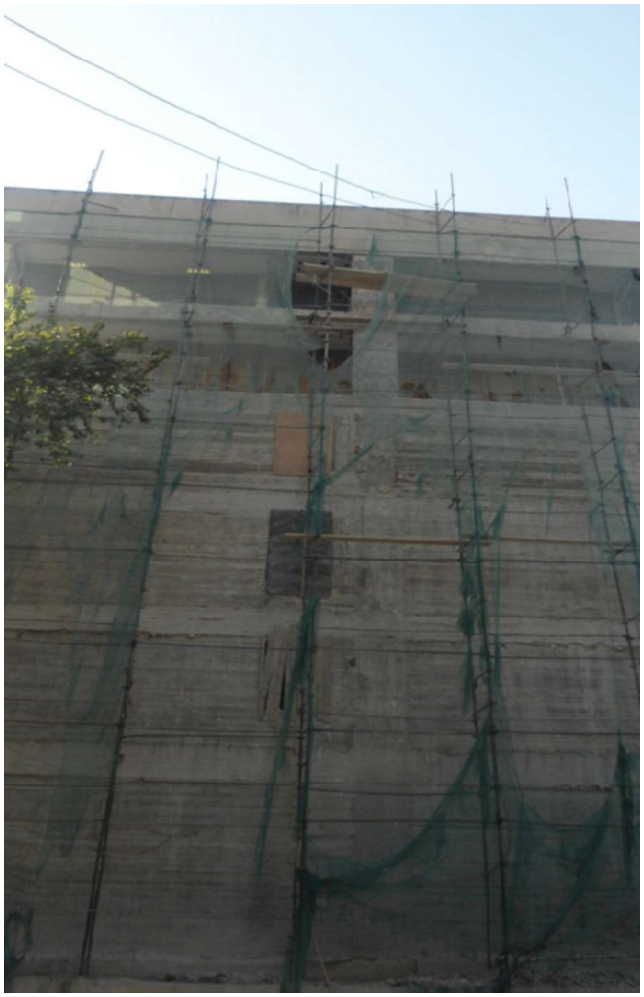
- Execution of 308 micro-piles diameter 30cm depth 13-lm inside and outside the church.
- Connection of the piles with pre -stressed ground beams.
- Connection among beams and walls with shear connectors.
- Fixing of walls by installation of cables all around the church to prevent cracks widening.
- Casting of slab on grade.
- Reinstallation of marble tiles.
- Execution of draining system around the church to prevent water infiltration into footings.
- Dismantting and reinstallination of bell bridge

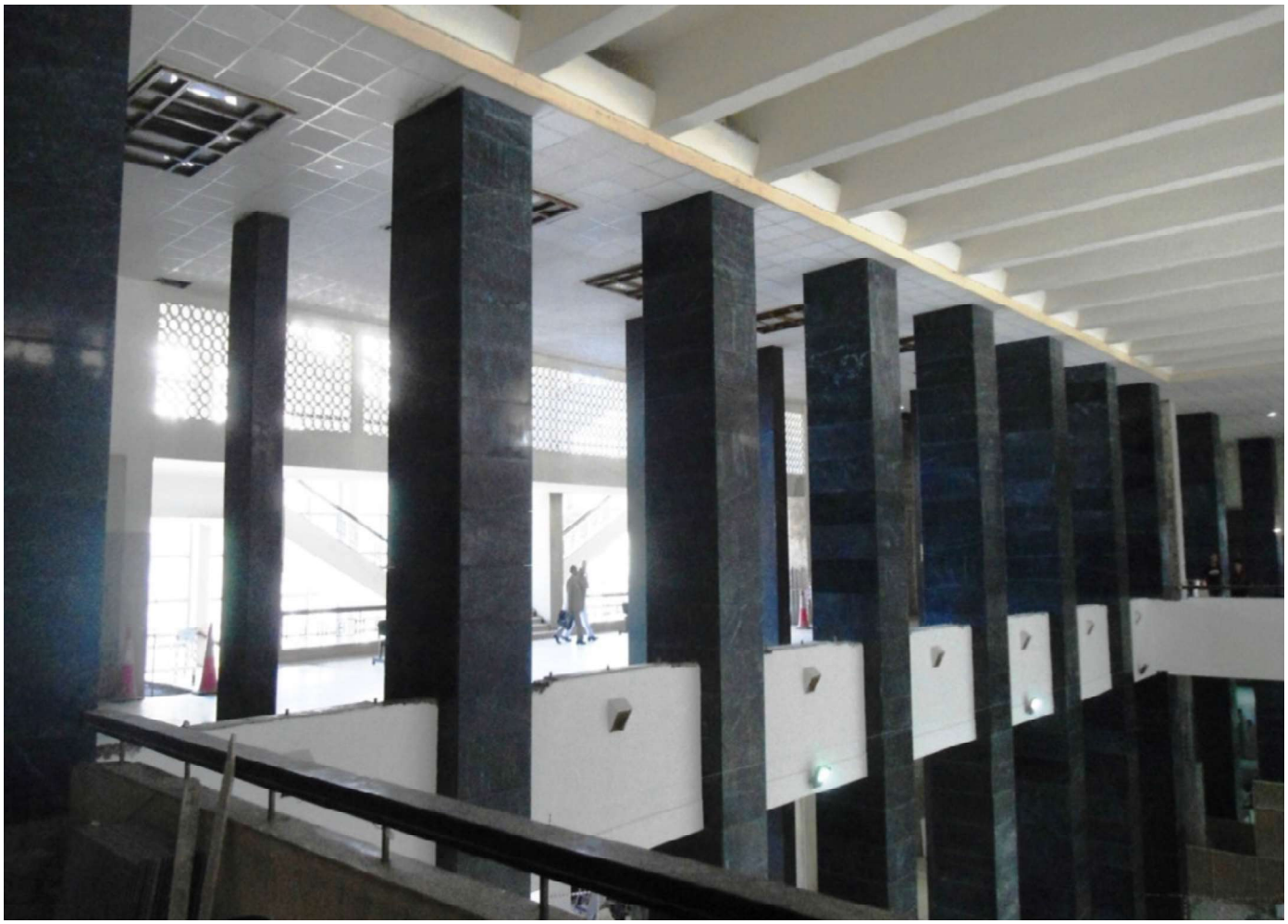
REHABILITATION OF BEIRUT JUSTICE PALACE

Client: *Ministry Of Public Works*
Location: *Beirut - Lebanon*
Value usd ($) : *17,700,050*

The project consists of strengthening of Ministry of justice and palace of justice for seismic reason.

- Execution of 1000 micro piles diameter 30cm under the building depth 16.5-lm the work was executed in very difficult conditions because we kept the facility operational and the basement height is 2.2m.
- Steel construction floors area 6,000 m2.
- Replacement of 10 old elevators with new.
- Enlargement of existing footing in order to transfer load properly to the piles.
- Execution of slab on grade thickness 30cm to assure well connection of all footing.
- Execution of jackets to enlarge existing walls and columns.
- Execution of new shear walls and columns.
- The building was cut and separated transversally in order to execute two new expansion joints width 10cm for seismic movement.
- Execution of a totally new fifth floor of steel structure area





All related finishing works:

- Execution of epoxy flooring for parking
- Installation of selected type of marbles for walls and columns
- Ceramic tiles for toilets
- Parquet for offices
- Painting
- False ceiling
- Electrical
- HV/AC
- Wooden doors and panels for walls
- Aluminum for door sand windows
- Plumbing

The whole project area is 60 000m2, steel quantity is 2500-Ton and concrete quantity is 20,000m

04

Other Services

BASALT AGGREGATE IMPORT

BASALT AGGREGATE IMPORT

TRAFFIC SIGNS AND ROAD MARKING

DIRECTIONAL SIGNING

SLIPFORM PAVER

Slipform Paver Type U-Channel, Slipform paver new jersey barrier

EMERGENCY MAINTENANCE AND DRAINAGE WORKS

COLD IN PLACE RECYCLING AND MILING

Implementation of this belief was achieved by the introduction of a complete new set of equipments by German maker “WIRTGEN” consisting of several synchronized machines that maintain and restore damaged highway strips by using the method of “cold recycling system” and they also are unrivaled for soil stabilization.
First they scalp defined thickness of the upper layer of the asphalt pavement then recycle this layer with moisture of cement, tar and water to produce a new high strength layer with capacity of rehabilitating 5000m2 of roads in 8 working hours. As efficient as this might be to the client, this technology took considerable amounts of investments millions of dollars to employ. Up to this date Antoine Makhlouf for Trading and Contracting is proudly the only company in Lebanon to propose such technology and machines.

Cold in-place recycling benefits:

- High performance daily system that is incomparable to conventional methods.
- Do not disturb the traffic circulation, avoid local diversions.
- Practical during rainy seasons.
- Normally only one layer of asphalt is sufficient to protect the surface against high-speed traffic.
- Suitable process to the underground facilities. In case of facing shallow underground facilities, a few centimeter of base material should be spread on the top to make the road suitable for recycling. Upgrading the road elevation, especially in the rural areas, should be considered.
- Immediately open the traffic after finishing the compaction.
- Decreasing the water susceptibility on the in-situ material.
- Application to a wide range of material.
- Increasing material shear strength.
- Increasing the in-situ CBR of the sub-base
- Preserving initial level of the road.
- Modifying cross and longitudinal road profile.
- Strength characteristics approach that of cement treated materials, while remaining flexible and hence relatively fatigue resistance.
- Using materials classified as unsuitable or low quality in conventional methods.
- Producing no environmental pollution by using in-situ asphalt.
- Using in-situ material leads to precious natural resources preservation.

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- Immediately open the traffic after finishing the compaction.
- Decreasing the water susceptibility on the in-situ material.
- Application to a wide range of material.
- Increasing material shear strength.
- Increasing the in-situ CBR of the sub-base (stabilization).
- Preserving initial level of the road.
- Modifying cross and longitudinal road profile.
- Strength characteristics approach that of cement treated materials, while remaining flexible and hence relatively fatigue resistance.
- Using materials classified as unsuitable or low quality in conventional methods.
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