A FORCE

Post Tension System

PREQUALIFICATION

Keep In Touch With Us

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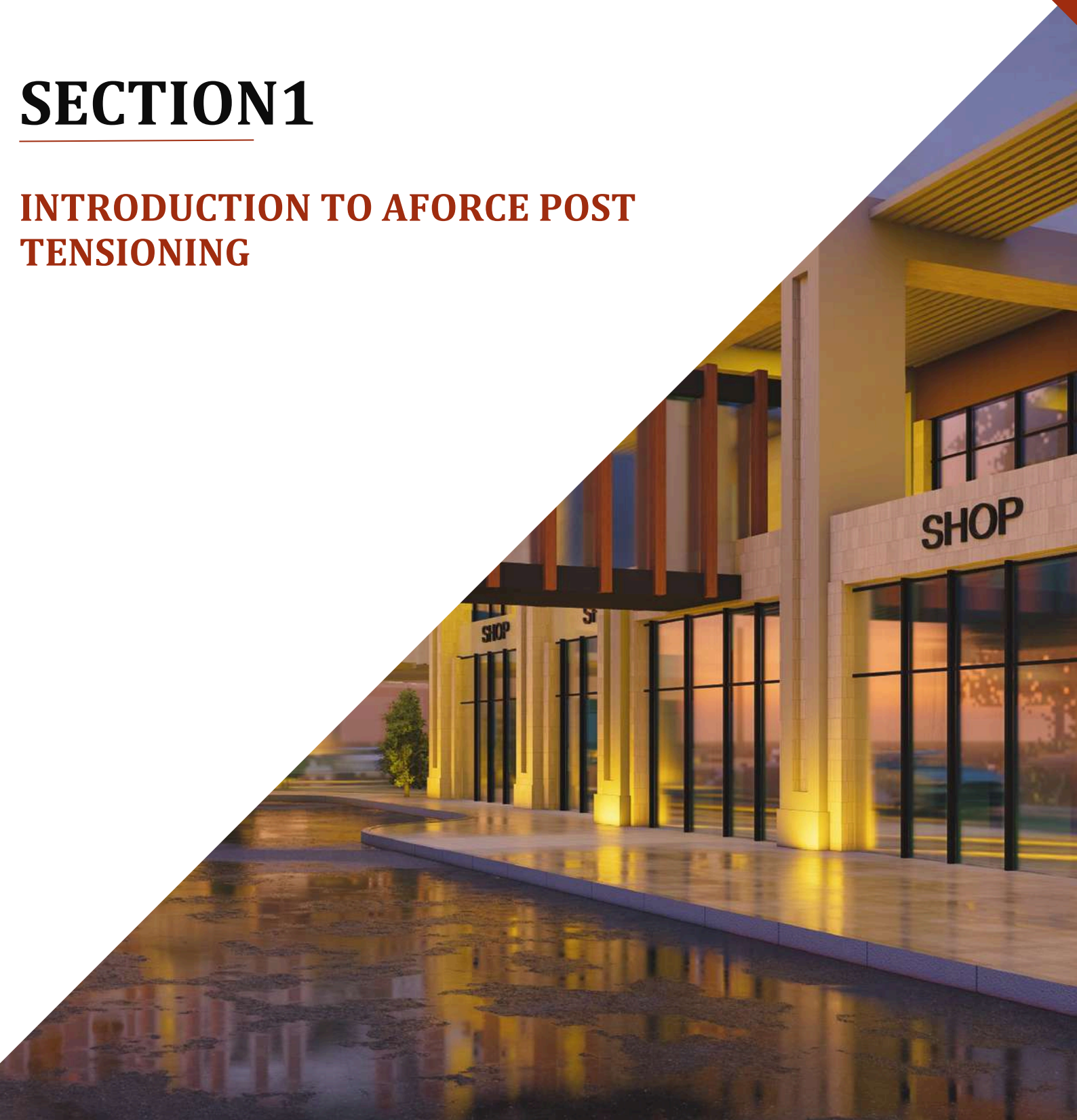
PREQUALIFICATION

CONTENT

SECTION1

INTRODUCTION TO AFORCE POST TENSIONING



INTRODUCTION

In the modern-day market, there is an ever-increasing demand from developers to design and construct using the most economical and environmentally sustainable building technology; the requirement for the most efficient structural form continues to grow. Driven by tighter programs and budgets, the expressions 'value engineering', 'sustainable construction' and 'faster', 'lighter', 'stronger, are being used by Clients, Architects, and Design Consultants the world over. As a result, more and more developers are looking at the advantages offered by post tensioned solutions.

ABOUT AFORCE

AFORCE has provided services to Project Managers, Architects, Engineers and Main Contractors globally earning an excellent reputation within the construction industry. The key to our success and growth is our ability to provide our clients with a full range of post tension services from the preliminary design phase to a project's completion. We are often called upon at early stages of a project to consult on the design of special structures, bridges and buildings, where the project complexity could benefit with the introduction of post tensioning or other value engineering solution offered by Aforce's Systems. Our advantage is the fact we also have extensive experience in similar projects both locally and internationally, complete with access to the latest design tools to provide our clients with the most practical and economical design solutions. Our in-house design and construction services provide our clients with a clear and direct line of communication that is essential for any team when executing a project.

THE AFORCE SOLUTION

The AFORCE Mono-Strand Post Tension System can be used in a variety of residential and commercial structures. Our system offers substantial savings over conventionally reinforced concrete Structures in the form of material reductions, simplified formwork systems and reduced construction time. Our system ensures structures enjoy the added benefits of increased column spans and reduced slab thickness decreasing the overall dead weight of a building which directly translates into further savings in the foundations and substructure of a building. By adopting the AFORCE Post Tension System, the following

structures can experience significant performance benefits:

- Mixed use commercial and residential high rise structures
- Single and multi-storey car parks
- Hospitals, education facilities and government buildings
- Shopping centres and commercial complexes

The AFORCE Multi-Strand Post Tension System is designed for use in concrete structures such as silos, segmental bridges and continuously stressed structures. We can also utilise our Multi-Strand Post Tension System for heavy duty structures such as raft and transfer slabs and also to complement our Mono-Strand Post Tension System in beams throughout the structures mentioned above.
Further information on our Multi-Strand Post Tension projects and civil and infrastructure applications can be provided upon request.

ABOUT BONDED POST TENSIONED CONCRETE

Bonded post-tensioned concrete is the descriptive term for a method of applying compression after pouring concrete and the curing process (in situ). The concrete is cast around a plastic, steel or aluminium curved duct, to follow the area where otherwise tension would occur in the concrete element.
A set of tendons are fished through the housed duct and the concrete is poured. Once the concrete has hardened, the tendons are tensioned by hydraulic jacks that react (push) against the concrete member itself.
When the tendons have stretched sufficiently, according to the design specifications, they are wedged in position and maintain tension after the jacks are removed, transferring pressure to the concrete. The duct is then grouted to protect the tendons from corrosion.
This method is commonly used to create monolithic slabs for and can provide significant benefits to slabs on grade being constructed in locations where expansive soils create problems for the typical perimeter foundation.
All stresses from seasonal expansion and contraction of the underlying soil are taken into the entire tensioned slab, which supports the building without significant flexure.
The same methodology is practically applied to post tension slabs in a suspended slab structure which experiences similar benefits where upon completion of tensioning as detailed above the loads are predominantly distributed to the columns and the maximum support of the post tension tendon is provided mid span. Among the advantages of this system over un-bonded post-tensioning are:

- Reduction in traditional reinforcement requirements as tendons cannot have gradual or immediate loss of force due to wedge failures.
- Tendons can be easily "woven" allowing a more efficient design approach.
- Higher ultimate strength due to bond generated between the strand and concrete.
- No long-term issues with maintaining the integrity of the anchor/dead end due to a fully bonded tendon.

SERVICES PROVIDED BY AFORCE

AFORCE is uniquely qualified to provide its clients with the necessary design assistance, experience, products and associated construction services for a wide range of projects in the public and private sector. Our highly skilled and dedicated teams allow us to maximize our clients experience with in-house service capability including but not limited to the following disciplines:

Engineering

- Concept and preliminary design input
- Building analysis and design
- Design of post-tensioned foundation structures
- Value engineering to civil and commercial structures
- Alternative post tension and conventional reinforcement solutions
- Drafting and shop drawing services
- Cost-benefit analysis of various structural arrangements
- Structural feasibility studies
- Onsite supervision services
- Remedial Engineering

Construction

- Supply of onsite project management and site supervision
- Supply of post tension plant and materials
- Supply of post tension labour
- Execution of post tension works compliant with the StrongForce Iso 9001 certified management and QA/QC system.

Remedial Works / Other Services

AFORCE Post Tensioning offers a remediation service for repair of cracked concrete slabs and for strengthening existing structures to allow further extensions including the use of carbon fibre and/or jacket strengthening. We also offer heavy lifting solutions for many applications including replacing bridge bearings, testing piles and pre-stressing columns. Please contact us for further information in this regard.

VALUE ENGINEERING & PERFORMANCE BENEFITS

Post Tensioned concrete offers significant performance benefits, particularly in the areas of fire resistance, sound transmission and floor stiffness. Post Tensioning substantially minimizesthe dead weight of a structure by way of reduced slab thicknesses providing additional indirect savings through reduced foundation loads, further adding to the direct savings achieved through the post tension slabs this makes post tension the most cost-effective design solution in most applications.
Aforce's competitive advantage is in its patented systems which offers our consultants and clients savings in material costs, construction time and greater column spans. In addition, the reduction of structural height and weight as outlined above, improved deflection and crack control contributes to a more slender and stronger concrete frame. Aforce's highly skilled design team have the qualifications, experience and latest design software to carry out total design and detailing for almost any structure. Post Tensioned construction has the following typical benefits:

- It is one of the more environmentally friendly forms of construction giving up to 25% saving in concrete and up to 75% saving in reinforcement.
- Up to 30% weight saving with high-rise structures.
- More Architectural freedom, larger spans, reduced columns, beams and slab dimensions.
- Greater floor to ceiling heights allowing other trades such as MEP greater flexibility and tolerances.
- Flexibility in subdivision or floor space and wide spanning or boldly cantilevering floors leaving generous space for lobbies and public areas
- Simpler and minimal reinforcement, and overall less materials to be procured and reduced labour as less materials to be installed.
- Faster construction period, improved constructability and reduced crane time, since components are fewer and lighter.
- Simpler formwork construction and allows earlier stripping of formwork than traditional methods.
- Greater flexibility for post construction slab penetration requirements.
- The same characteristics for demolition as reinforced concrete structures.

SECTION2

PROJECT LISTS

PROJECT LISTS

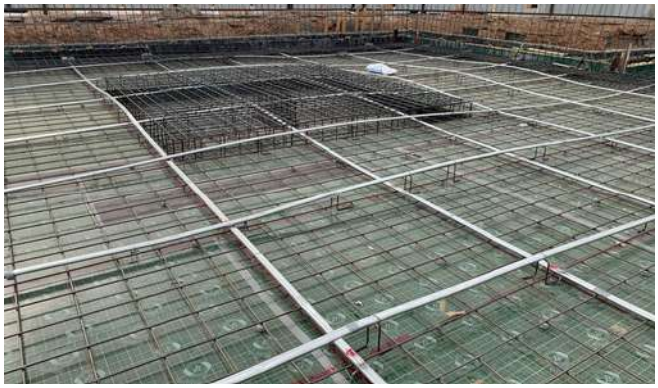
Code	**1**
project name	Laban Square
owner	Eilm Almiemar
Consultant	raka' alqabida
Contractor	Awtad Al Fahd Contracting
Building type	Mall
Space	**12500**
City	RIYADH

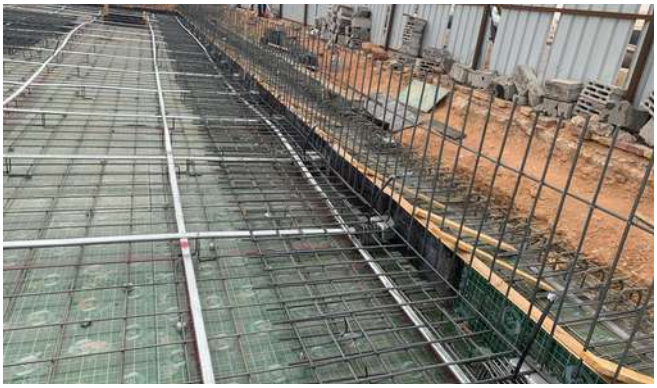
PROJECT LISTS

PROJECT LISTS

Code	**2**
project name	Khurais square
owner	eilm almiemar
Consultant	raka' alqabida
Contractor	Awtad Al Fahd Contracting
Building type	Mall
Space	**12500**
City	RIYADH

PROJECT LISTS





PROJECT LISTS

Code	**3**
project name	Tahlia Building
owner	International Trading and Contracting Company
Consultant	Standard dimensions
Contractor	Ouzoud Contracting
Building type	Commercial office building
Space	**5000**
City	RIYADH

PROJECT LISTS

PROJECT LISTS

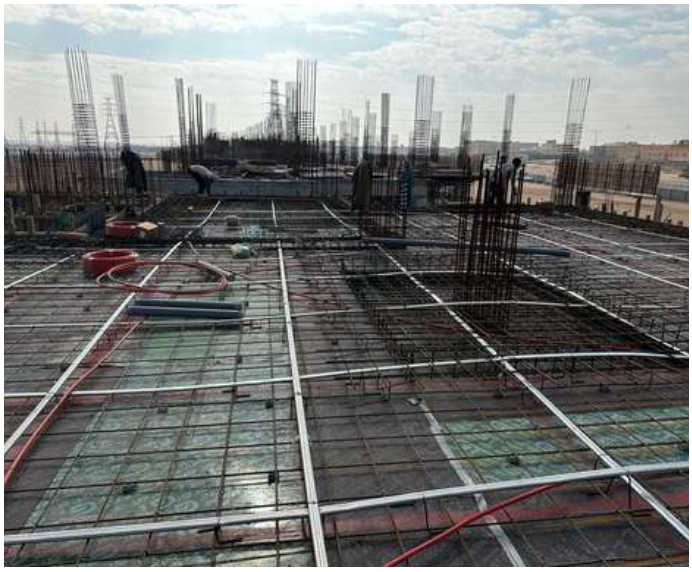
Code	**4**
project name	Villa
owner	Private
Consultant	FJES Engineering Consulting
Contractor	Mushtaq Ahmed Khan Contracting
Building type	Residential villa
Space	**1200**
City	Dammam

PROJECT LISTS

PROJECT LISTS

Code	**5**
project name	U vally mall
owner	KHAT AL EMDAD
Consultant	Afkar Altamayuz
Contractor	Sinam Contracting
Building type	Commercial mall
Space	**25000**
City	Hafar Al Batin

PROJECT LISTS



GET IN TOUCH

We welcome inquiries and collaboration opportunities. Feel free to get in touch with us to explore how we can work together.

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