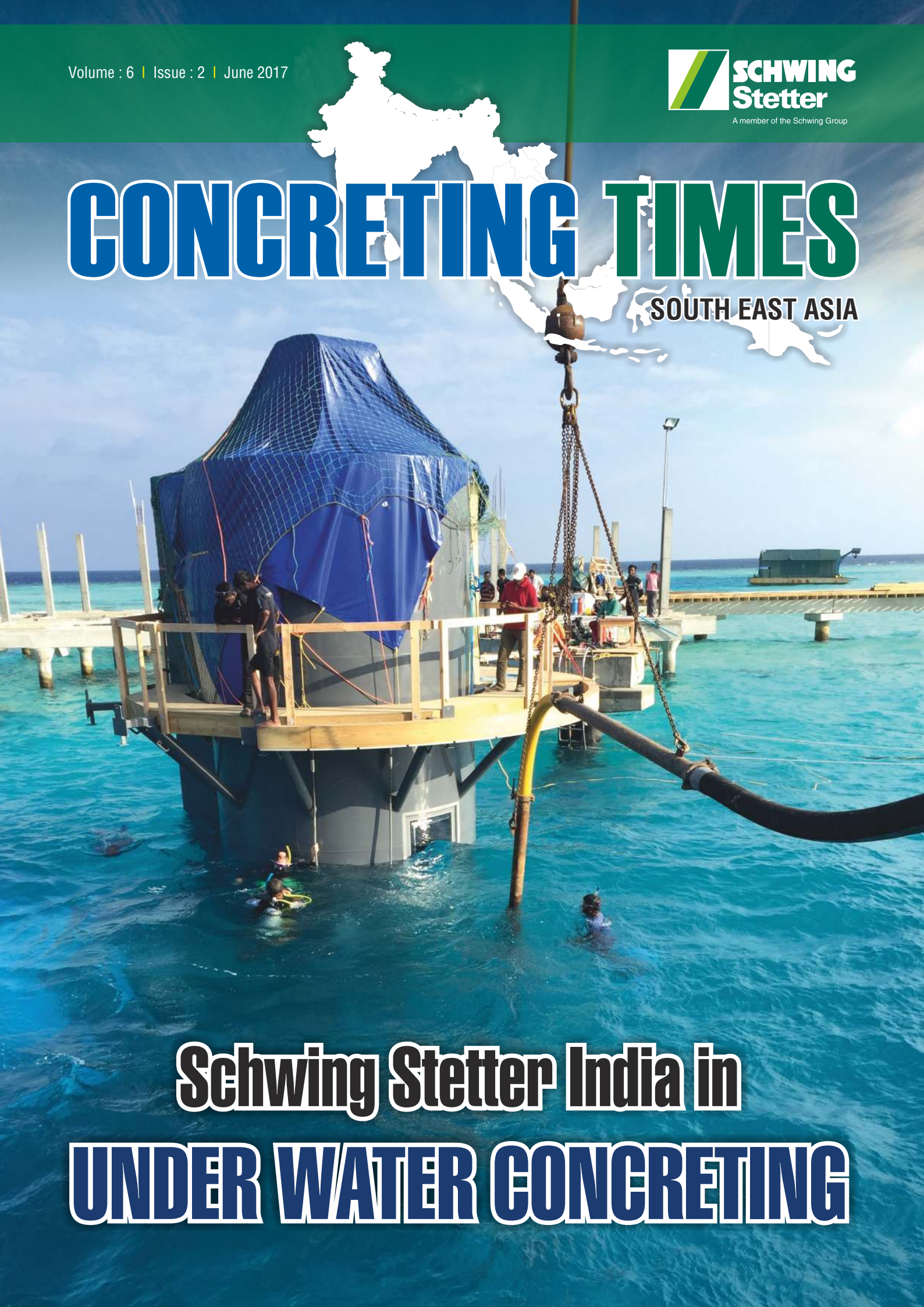
Volume : 6 | Issue : 2 | June 2017

SCHWING Stetter
A member of the Schwing Group

CONCRETING TIMES

SOUTH EAST ASIA



Schwing Stetter India in

UNDER WATER CONCRETING

CT Editorial

Dear Customer,

Greetings!!

In this issue, we introduce you a new M30Z batching plant which is mobile, requires no foundation. Since its launch, we have received an overwhelming response in the domestic market and now we have received good reviews in the export market as well. We have brought to you a cover story on underwater concreting in Mumbai, India.

We are continuously launching new models of batching plants, concrete pumps and truck mixers that are required for varied job sites in South East Asia. Our machines displayed at Intermat, Bangkok in June 2017 received a very positive response from customers and chassis manufacturers in Thailand.

We will be participating again in Construction Indonesia in Jakarta between 13th–16th September, this year.

Look forward to meet you there.

With best regards,

V. G. Sakthi Kumar
Managing Director – SSSSPL.
sakthikumar.vg@schwingstetterindia.com

Sisy Augustine
Executive - Corporate Commmunications
sisy.augustine@schwingstetterindia.com

Marketing Offices - SEA

ASEAN:
02-01, 316, Tanglin Road,
Singapore - 247978. Phone : + 65 6871 8848
Mobile No: + 65 98300123

INDONESIA:
Mobile No: + 62 8118 77 4114
+ 62 818 222214
shailendra.halbe@schwingstetter.co.id

MYANMAR / CAMBODIA:
sanjib.duttagupta@schwingstetterindia.com
Mobile No: + 91 98308 96010

MALAYSIA / SINGAPORE
PHILIPPINES / THAILAND:
aseetho@schwing.de
Phone : + 65 6871 8848
Mobile No: + 65 98300123

Written & Edited by Sisy Augustine
Published by Schwing Stetter.
All Correspondence to be sent
to editor.ct@schwingstetterindia.com

For private circulation only, not for sale.

Follow us on

CT Projects in progress and Events

Frima Global Home

Quezon City: This residential condominium project is a 6 storey building with a height of 18 meters. It is located at Hilltop New Manila and is being constructed by Phiaso Enterprises. Concrete pressure is at 4000 PSI, 28 days. Total concrete poured and produced so far is around 70 m^3. Schwing Stetter equipment in use at this project is a SP 2800 concrete pump.

Mandarin Bay Resort and Hotel

Malay Aklan: This Boracay Island project is being constructed by Kuntelconstruction and Development Corporation. Total concrete to be poured and produced in this project is around 10,000 m^3. Concrete pressures used are 3500 PSI, 4000 PSI, 5000 PSI.Schwing Stetter equipment in use at this project are SP 1400 concrete pump and a CP 18 batching plant.

World Trade Center

Indonesia: This third tower project is being constructed by PT Balfour Beatty Sakti. It is 210m high and this entire building project was constructed solely using Schwing Stetter Concrete Pump SP 3500 for a span of 15 months.

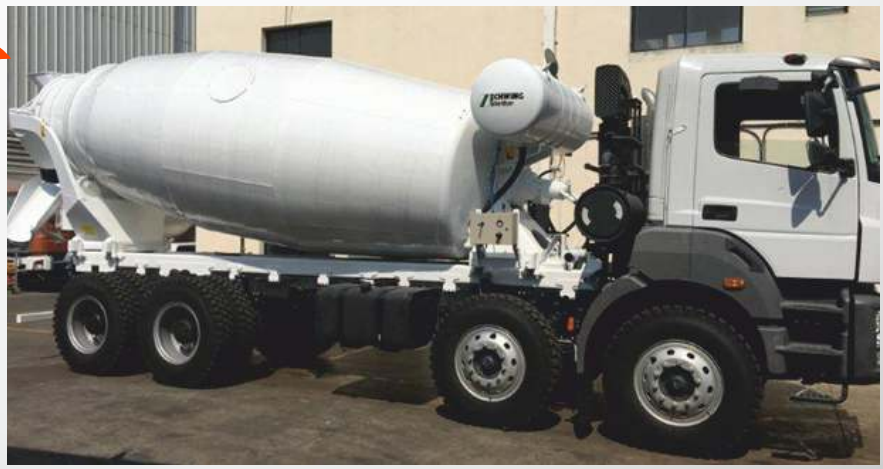
Intermat ASEAN 2017

Bangkok: Schwing Stetter was part of the first edition of Intermat Asean 2017, Thailand, the Southeast Asian trade show for construction and infrastructure which took place between June 8th to 10th, 2017 at impact exhibition and convention center. The response was overwhelmingly positive for the stalls and transit mixers displayed at the outdoor exhibition and demonstration area in the event.

New Launch!

12m^3 Concrete Mixer

Schwing Stetter with its long standing heritage in concreting introduced this new product AM12FHC/ AM12SHC in India. This concrete transit mixers comes with a nominal capacity of 12,000 ltrs and with a total geometric volume of 20,690 ltrs. This Thunderbolt 4843 K / FUSO chassis comes with a wheel base of 5830 mm.



CT Product Focus

Most Innovative M30 Z Batching Plant

Customers are looking for newer innovations to help them to cut costs. We, Schwing Stetter India offer the customer, an innovative 30 cubic metre batching plant that will save them 15% on the total installation cost in comparison to a typical 30 m3 batching plant, and further these are the advantages customers receive, thanks to the modular system of the Stetter mobile mixing plant:

- Fast assembly and disassembly
- Easily accessible
- Economical, reliable
- Compact and Easy to maintain.
- No Foundation required.

Our brand new M30Z Batching plant is designed from the ground at its Irungattukottai plant, the new model is equipped with a pan mixer and can produce a concrete output of 30 cu.m/hr. The concrete discharge height is 4 metres and can be operated at a voltage of 415V. Control Unit for this batching plant is MCI 70 version 3.1.

Besides this, it also does not requires a ramp or conveyor to feed the concrete into the bins. The total installation altogether requires batching plant+civil work+conveyor+loader, and not to forget the power and water connection.

Disruptive innovation is what we have done here. We are giving the customer, the choice of eliminating the foundation and offering one and only complete concreting solution.

Optional mounting of additional weighers; like water and ice weighers are also provided. The ice weigher is used for the weighing of flake ice. At the bottom, the side walls are sloped outwards which ensures the complete discharge of the container.

The plant is delivered to the construction site on a semi trailer. Only a mobile crane is sufficient for the erection. It's easy to erect, dismantle and transport because it's a one unit on the whole.

In the innovative M30Z Batching Plant, there is no foundation required. Aggregate feeding can be done without a ramp or feeding belt conveyor. Since, the plant comes with a Low feeding height and Skid (no foundation required).The customers are able to save 15% from the total installation costs that will be incurred making the plant cost effective.

Globally, Schwing Stetter India is recognized as the Number one concreting company, with total concreting solutions provided to the varied customers around the World looking for innovations for the changing times. In India, we are a major player in the concreting equipment sector with long standing heritage and expertise.

The modern manufacturing plant stands testimony to its strong local manufacturing capabilities since 1998. Additionally, its World class product line stands strong supported by a stronger after sales, service and spares support.

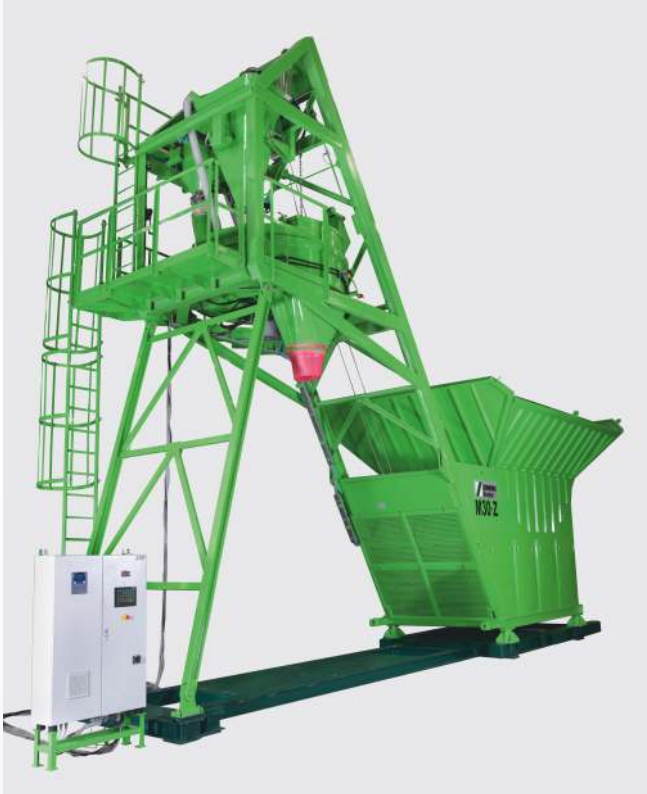


Table 1 : Total Installation costs in a Batching plant with comparison

Requirements (Cost Involved)	Typical 30 m^3 Batching Plant (%)	M30Z Batching Plant (%)	Savings in M30 Z Batching Plant
Plant Cost	76	85	
Foundation	8	0	
Conveyor	16	0	
Total	100	85	15 %

CT Cover Story

Underwater Concreting

Underwater, the dynamics in pouring concrete differs in many dimensions than it is on land. Underwater concrete must flow laterally and compact itself under its own buoyant weight. Pumping concrete has the additional added advantage of operational efficiency with potential savings of time and labour. Direct concrete pour involves both horizontal and vertical delivery methodologies.

When concrete is placed underwater, challenges that have to be looked into maintaining the longevity of the concrete while constructing are rebar corrosion, pitting, scouring, spalling concrete, scaling and cracks. Concrete placed underwater have to be very strong to stay for centuries together as it is also susceptible to cement washout, laitance and segregation.

Schwing Stetter India has created many a landmark project in successful underwater concrete applications like that of the BandraWorli Sea Link.

An architectural marvel

BandraWorli Sea Link is the best of Indian engineering making it the first eight lane freeway over the open sea. It links Bandra in the western suburbs of Mumbai with Worli in South Mumbai. It is a part of the Western Freeway Sea Project to upgrade the road transportation network of Greater Mumbai. The project was built by Hindustan Construction Company with Schwing Stetter India equipment.We supplied the entire set of machinery required for concrete placements.

Material	Model	Quantity
Concrete Pump	BP1800	6
Concrete Pump	BP3500	2
Separate Placing Booms	DVMK 42	1
Separate Placing Booms	SPB 28,24	3
Concrete Mixers	AM6 (Barge - Mounted)	18

TATA Power Gammon CP 18 with star batcher at Mundra Power project

The height of the cable stayed tower is 128m, which is equal to a 43 storey tower. The cable stay section spans 600 m in length. Each of the cable can take a weight of 900 tonnes. It is monitored by an intelligent bridge system with a 16 lane, state-of-the-art toll plaza. 2342 pre-cast segments were made for the total bridge of varied width for the 4.7 km, twin, 4-lane independent carriage way bridge across the open sea.

Concreting 126 metre high tower equivalent to a 43 storied building!
Renamed as Rajiv Gandhi Sea Link

The major challenge was in pumping the concrete for this project. When HCC started the project, they had the responsibility of pumping 95,000 m^3 concrete out of the total concrete of 2,30,000 m^3 which is of the highest grade (M60). Since the concrete had to be pumped into the sea, it had to withstand severe corrosion by sea water and it also had to withstand challenges of nature such as temperature difference, high tide, and cyclone. The concrete specified had special design which included micro silica.

Besides, huge volume of concrete had to be pumped at one go. The concrete setting time had to be delayed to ensure that there is no cold joint in the concrete. The project authority and the consultant had suggested silica 1 and super plasticizer - BASF admixture for retarding the setting time .

In March 2003, HCC faced considerable difficulty in pumping the concrete when they tried pumping 174 metre horizontal distance. At that point of time, they had 1 Schwing Concrete Pump Model BP 1800 with them to execute this concreting. When they started out, the pumping was too slow and a natural doubt came in the mind of the customer whether the Concrete Pump has any efficiency problem. The Schwing Service Team checked all the parameters of the concrete and confirmed to the customer that the pump was in excellent working condition, however, the concrete specification needed to be checked for pumpability.

While this discussion was on, several other Concrete Pump manufacturers approached HCC and tried to convince them that the Schwing pump BP 1800 is not suitable for pumping whereas with a higher number of strokes their machine could do this job comfortably without changing the mix.

The change of the concrete mix design was suggested by Schwing experts and accepted in the month of May, 2003, an 1800 Concrete Pump with 175 metres pipeline was laid and the pump started pumping the concrete smoothly and established the fact that the concrete pumpability was an issue in the concrete, reinforcing the initial stand taken by Schwing (and contradicted by other suppliers).

The customer understood the problem fully now and went ahead purchasing another five BP 1800 concrete pumps from Schwing and started the concreting comfortably in this project.

Another challenge came when the customer started for vertical pumping on Pier 19 which had a horizontal distance of 300 metre plus pier height of 132 metres. The customer used Schwing concrete pump model BP 3500 with the help of a separate placing boom model DVMK 42 and completed the concreting successfully.

Schwing Stetter India established by pumping the concrete, their technical competence in recommending the concrete pump for the right placement and informing the customer the actual facts about the boundaries in pumpability of concrete. They also showed the whole thing practically by staying at site and ensuring till the last cubic metre of concrete was poured into this landmark project the Bandra-Worli Sea Link project by HCC.

Conclusion

The highlights of building a challenge like Bandra Worli Sea Link renamed as Rajiv Gandhi Sea Link are the two aesthetically designed cable stay bridges of Bandra (500 metre span) and Worli (150 metre span) with the highest tower soaring to a height of 126 metre equivalent to a 43 storied building. Special emphasis has been given to incorporate lightning protection, continuous power supply and a high tech security system.

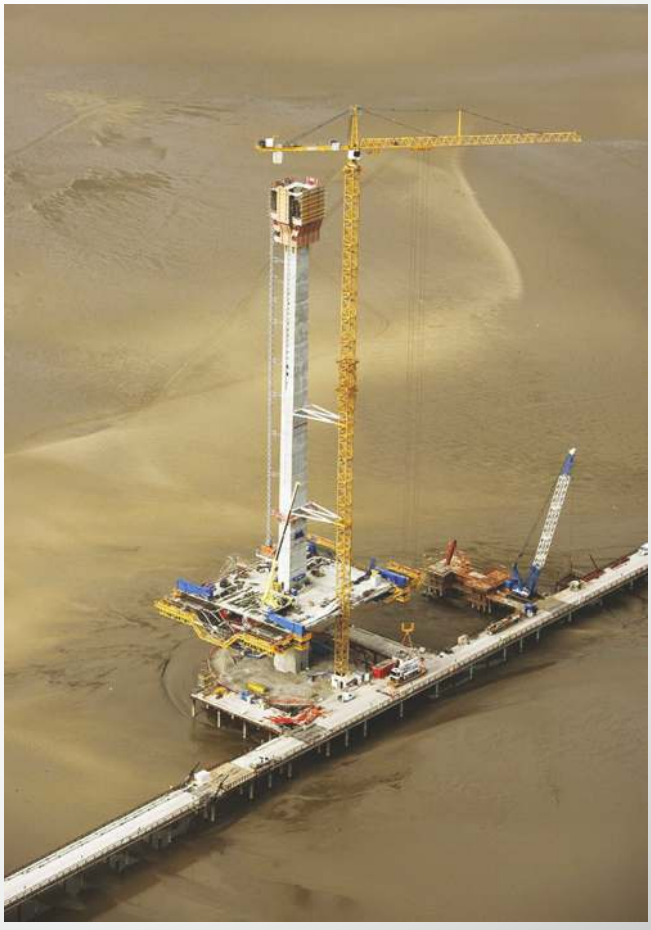
The new Bandra-Worli Sea Link is a symbol of the great advances of the economy and engineering capabilities of the Indian subcontinent – not only because it is the sort of structure that could grace the skyline of any major city, but due to the involvement of developing local manufacturing which can compete with the world's best in the supply of complex structural components, another thread in the tapestry of the region's remarkable ongoing development as a powerhouse of the world economy.

CT Schwing Stetter around the World

Need a Lift?

On a recent visit to the Merseylink bridge building site, it was interesting to see a Schwing S 24 X on top of an isolated platform. Another S 24 X was at ground level, pumping concrete up to the raised one and the end of the lower one was connected directly to the pipeline on the boom of the upper one so the concrete was being pumped from ground level through both booms to the end of the upper one. The lower machine was doing the pumping while the other was placing the concrete!

Thanks, to Mark Reilly from Reilly Concrete Pumping for this wonderful shot above showing the Schwing pump being lifted onto the platform - and also for the picture above showing the crane about to lift it up.



CT Schwing Stetter around the World

Apparently a number of methods were tried in order to get the pump up onto the pylon including a large net before the 'mobile platform' was tried.

Mark very kindly showed him round the whole area where Reillys, who are supplying the concrete pumps for the project had no less than 7 Schwing Pumps on Site!