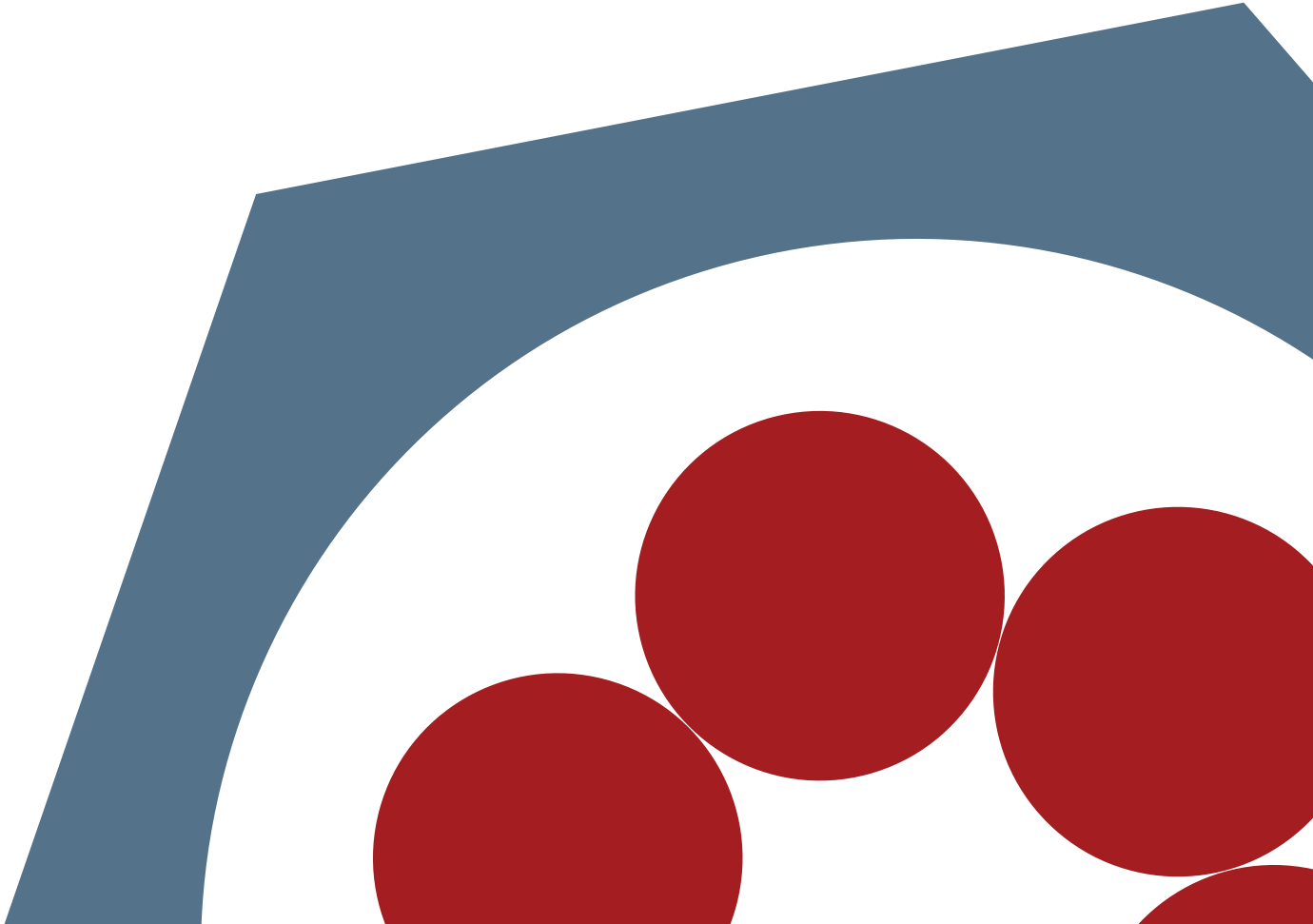




Istanbul Sabiha Gökçen Airport (SAW)

Overnight reconstruction with rapid-hardening concrete Concretum® Q-FLASH 2/20



Overnight reconstruction of runway centerline at Istanbul Sabiha Gökçen Airport

Project overview

Concretum® Q-FLASH 2/20 is a latest generation rapid-hardening concrete. Q-FLASH 2/20 can be produced, transported and processed just like conventional concrete. Due to severe damages on its single runway, Sabiha Gökçen airport was looking for a repair method which didn't require extended closure times. Concretum® Q-FLASH 2/20 was ideally suited as it reaches the required compressive strength (20 N/mm²), for an aircraft to land on the newly poured slabs, just 1 hour after placement. This allowed damaged areas on the SAW runway surface to be replaced stepwise during just 5 hour overnight closures. In total 8'800 m² (2018) & 7'200 m² (2019) of the runway were successfully replaced from March to September 2018 / April to October 2019 without interrupting the airports operations.

product	Q-FLASH 2/20
exposure class	XC4, XD3, XF4
strength class	C50/60
consistency class	S2
max. aggregate size:	38 mm (crushed)
ASR resistance	resistant

compressive strength 1 h after setting	18 - 22 N/mm ²
compressive strength 2 h after setting	26 - 30 N/mm ²
shrinkage ϵ_{SH}	< 0.20 ‰
heat of hydration	210 J/g (equivalent to low heat cement)
moisture 3h after setting	< 4 CM-%

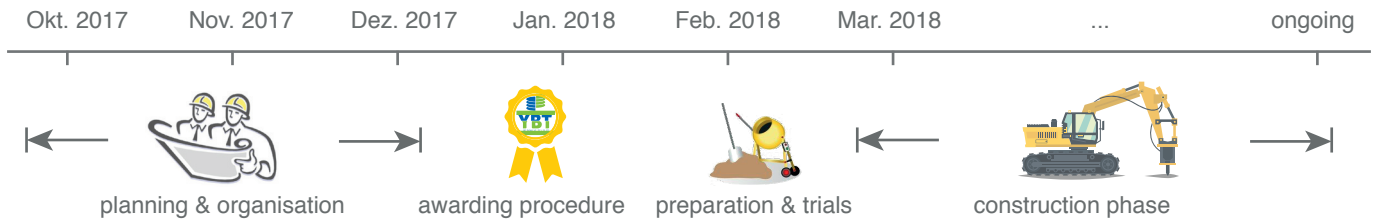
Project facts:

- > 6'000 m³ rapid-hardening concrete Q-FLASH 2/20
- 8'800 m² & 7'200 m² in total during 220 nights
- up to 7 slabs (3.75 m x 5 m) each night (up to 130 m²)
- First use of rapid-hardening concrete in Turkey
- Each night a success (incident free project)
- No delays due to construction work

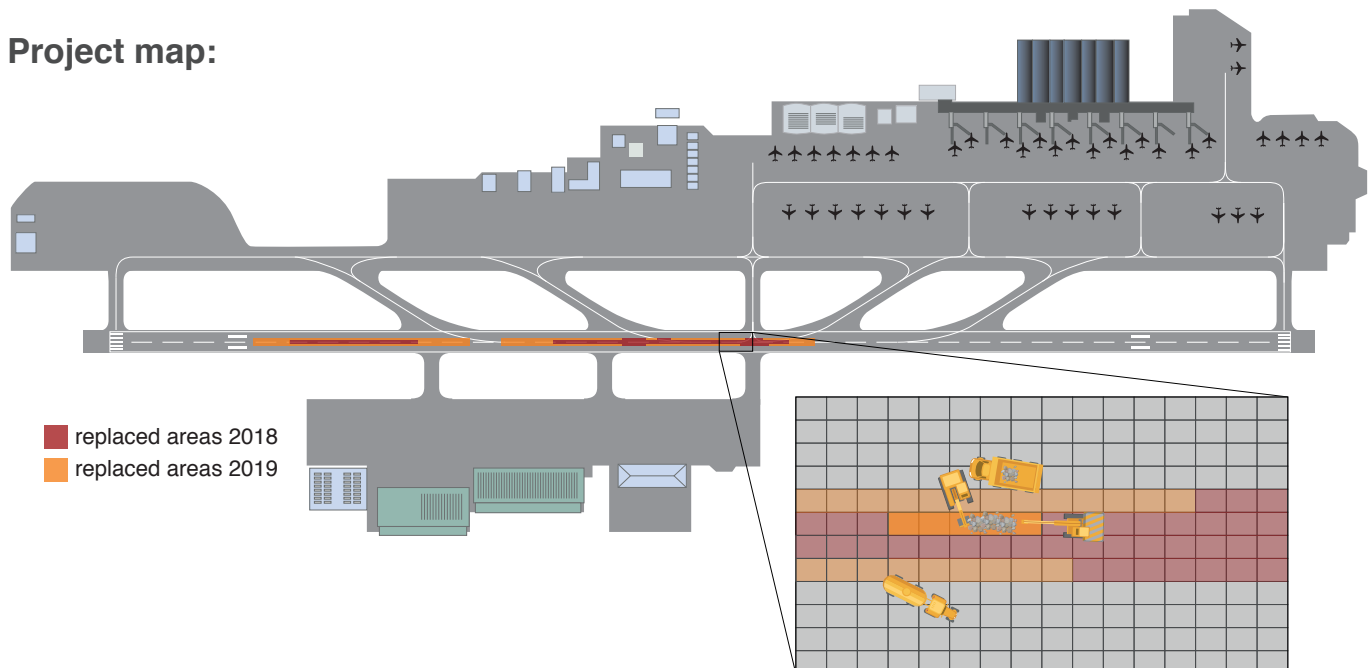
Project partners:



Project timeline:



Project map:



Step-by-step construction illustrations



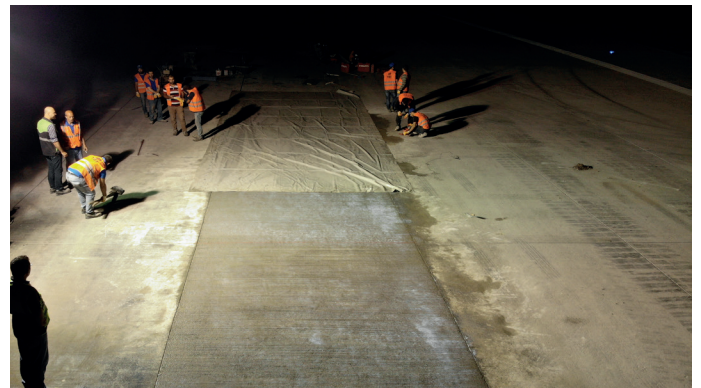
- breaking out existing slabs
- removing old concrete
- drilling dowelbars



- placing reinforcement
- unloading concrete
- spreading concrete with excavator

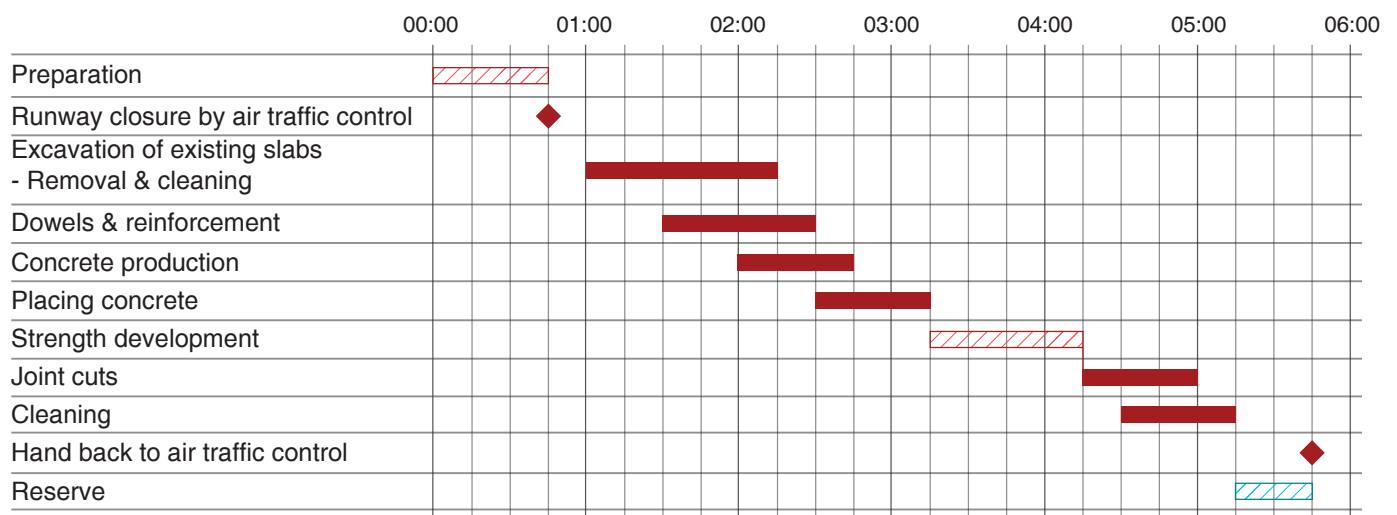


- compacting concrete with pokers
- finishing surface with truss screed
- broom finish



- applying curing compound
- covering surface with insulation mats
- cutting joints
- cleaning site and hand over to air traffic control

Schedule



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