FLAG VACUUM SYSTEM REFERENCE

Flood Protection Barrier of St Petersburg, Russia

The project consisted in the waterproofing of an artificial road tunnel built under the sea water level. The project was started in the ’70 with the north part. Only in the last 5 years they decided to protect the north part with an additional waterproofing system on the vertical parts. Despite of the warnings of the waterproofing experts the possibility of the waterproofing of the horizontal area was rejected by the investor. Therefore the north part has suffered several flooding problems and damages on the structure (the pressure of the water was uplifting the horizontal concrete slab) with consequent huge demand of injection material for reparation.

On the south part which has been developed only in the last 3 years, they instead decided to use the vacuum system all around the tunnel (vertical and horizontal). This turned so far to the elimination of leakage problems in the structure

- **PROJECT:** Flood Protection Barrier of St Petersburg, Russia
- **YEAR:** 1979-2011
- **GENERAL CONTRACTOR:**

    1. ОАО в г. Санкт-Петербурге “Метрострой” 190013, Санкт-Петербург, Загородный пр., д. 52а

    2. Boscalis BV Rosmolenweg 20, 3356 LK Papendrecht The NetherlandsT: +31 78 6969 000

    3. Hochtief AG Aktiengesellschaft Opernplatz 2 D-45128 Essen
       Tel.: +49 201 824-0

       Project consisted of many parts, and every part had its own general contractors.

- **WATERPROOFING CONTRACTOR:** TempStroySystem Moscow, 119296, Russian Federation phone: +7 495 2295403 fax: +7 495 7756169 e-mail: info@tempstroy.ru
- **WATERPROOFING SYSTEM: Flag PVC Vacuum System with compartmentalization**
- **MATERIAL:** PVC Flagon BSL 2,00mm + PVC Flagon BT-ST 2,00mm + protection layer PVC Flagon PZ + Waterstop W4
- **Sqm:** 148 287 + 148 287

			South part (2009-2011)	Nord part (1970-2008)	total
1	Area of waterproofing	m2	52042	96245	148287
2	Injection gel (Acril 509)	kilo		107390	107309
3	injection polyurethane	kilo		14500	
4	injection pipe	m	60387	-	
5	Working man on object	man	102	-	
6	efficiency	m2/week	263 - 2125	-