



Project Fact Sheet

M1 NORTHERN MOTORWAY, DROGHEDA BYPASS



PRODUCT	ABM Bridge Systems, Matière CM4 17.15m span
Project	Bridge over Rail Line/under Motorway
Client	Meath County Council
Completion Date	Matière structure completed January 2003
Design Team	SIAC – O'Rourke
Description	Design and construction of bridge over rail line to support motorway
FACTFILE	
Structure	Matière CM4 52m ² /225m ² sectional precast concrete arch
Span	17.15m (internal)
Height	8.0m (internal)
Length	102.5m (41 no. Units @ 2.5m wide)
REQUIREMENTS	

- Install over live rail line
- Rail line situated on embankment, which in turn needed to be supported
- Option for future twin rail line infrastructure

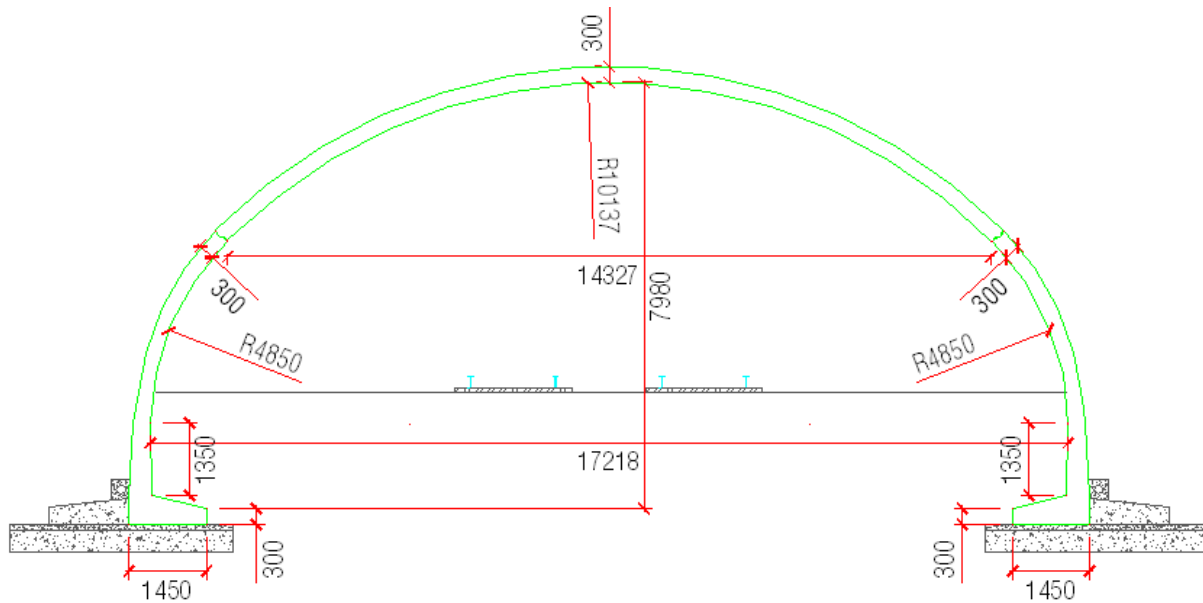
SOLUTION

- ABM design allowed for simpler and speedier on site construction and installation
- Specially devised construction methodology allowed rail line to remain open during construction.
- ABM design allowed for larger span to accommodate twin rail line if so required by Irish Rail.
- ABM also designed and installed earth retaining walls at each end of the structure.

Matière®

The Matière system was originally developed in France for hydraulic structures in the 1980's, since then the system has been developed into a modular range of arch, box and portal frames for a wide range of transport and infrastructure applications. Indeed, some 10,000 structures already exist worldwide exploiting soil structure interaction to minimise section sizes and allow rapid, cost effective on-site installation with precast units.

ABM hold the licence for the Matière system in the UK and Ireland.





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DETAILED SPECIFICATION

Upper Elements

Mould	Matière CM4 225m ²
Span (internal point to point)	17.15m
Height (internal soffit to joint)	3.0m
Roof thickness	300mm
Number of units	41
Volume of units	12.09m ³
Weight of units	30.23 tonnes
Additional information	

Lower Elements

Mould	Matière CM4 52m ²
Height (top of toe to ball/socket joint)	5.0m
Length of toe (from inside of wall)	1.0m
Wall thickness	300mm
Toe depth	300mm
Number of units	82
Volume of units	5.86m ³
Weight of units	14.65 tonnes
Additional information	
Heel construction	In-situ concrete

Additional Information

Concrete Grade	C50
Cement type	CEM1
Reinforcement cover	40mm
Couplers	N/A
Finish	As struck from steel formwork



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