The Normandy bridge: The bridge in figures

The total cost of the project, the cost for each part of the structure, for works of each type. Financing. Caution on the part of local authorities. Dimensions, weight and volumes.

Funding a project such as the Normandy bridge requires complex financial arrangements which require the mobilization of all the stakeholders. As the cost of the bridge alone exceeded the budget of the Le Havre Chamber of Commerce and Industry, local authorities agreed to guaranteer the necessary loans. These loans were obtained from a syndicate of roughly 20 banks, led by the Crédit Local de France. Ultimately, the structure will be paid for by tolls paid by the motorists who use it and the Tancarville Bridge.

Cost of the project

- Bridge on its own: 233 millions Euros
- with ancillary structures and design work: 305 million Euros
- with financial costs: 419 million Euros

THE BRIDGE IN FIGURES

Lengths

Total length of the bridge:	2141.25m (distance from the Place de la Concorde to the Place de l'Etoile in Paris)
Length of the central span:	856m, 624m of which is the metal deck
Saving on the journey between Le Havre and Honfleur :	40km (or 30 min)

Heights

Clearance above navigable channel:	52m
Height of towers:	214m (higher than the Tour Montparnasse)
Depth of foundations:	40 to 55m (the height of an 18 storey building)

Width of structure: 23.6m
4 traffic lanes
2 cycle paths
2 footpaths

Weights & volumes

Total weight of bridge:	roughly 200,000T (comparable to the Tancarville bridge)
Weight of superstructures*:	roughly 135,000T
Steel in reinforced concrete:	10,000T
Steel in prestressed concrete:	300T
Steel in cables:	2,300T
Rolled steel (metal deck):	5,600T
Volume of foundations :	19,000m3 of concrete (weight of reinforcement 2,000T)
Volume of materials used for access roads and protective structures** :	600,000 m3 of various materials
Total volume of concrete:	70,000m3

*central deck, access viaduct decks, towers, access viaduct piers, cables
**protection of towers, piers, slopes, etc.

Stay cables

Number	184 (between 95 and 450m long)
Diameter	upto 17.3cm
Composition:	between 31 and 53 seven wire strands
	1 800km of strand in all

Tower foundations

Number of piles:	56 (2.10m in diameter)
Depth of piles :	on average, more than 50m (the height of an 18 storey building)
	10,600m3 of concrete

Number of piles:	124 (1.50m in diameter)
Depth of piles:	on average 42.5 m
	9,800 m3 of concrete

Tower foundations

Number of piles:	124 (1.50 m in diameter)
Depth of piles:	42.5 m (average)
	9,800m3 of concrete

The workforce
10 million man-hours
1,200 men and women helped to build the Normandy bridge

The cost of the works for the conceded structure
(breakdown for different parts of the structure, 1995 prices)

The Normandy bridge:	FRANCS	EUROS
Anncillary structures (surroundings, plantation, access road, toll facilities, etc):	F1527M	€233M
Various (studies, etc.) :	F 233M	€35M
TOTAL :	F240M	€37M

The cost of the bridge
(breakdown according to type of works – 1995 prices)

General design work, construction management and project management:	202 MF	31 M€
Dykes, access embankments and interchanges, equipment, landscaping:	233 MF	35 M€
Temporary folding bridge:	18 MF	3 M€
Protection of Northern tower:	22 MF	3 M€
Foundations, towers, deck and cables:	1 487 MF	227 M€
Miscellaneous:	38 MF	6 M€
TOTAL:	2 000 MF	305 M€

Use of financial resources (1995 values)

Investments:	F2,000M	€305M
Financial costs during works (interest during the period of construction) and working capital:	F550M	€84M
Financial costs after opening and during the first year of operation:	F200M	€30M
TOTAL :	F2,75 Billion	€419M

The structure's funding

Self financing	F455M	69 M€
Loans	F2,295M	350 M€
TOTAL	F2.75 Billion	419 M€