



2004
ENVIRONMENT
REPORT

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PREAMBLE

Concern for the environment was a decisive factor in the French and British governments' choosing the Eurotunnel scheme:

- The Channel Tunnel runs entirely underground and does not interfere in any way with the marine environment
- The environmental advantages of rail transport are undisputed, since it uses electricity as its main source of locomotive power: it is safer, takes up less space, creates minimal atmospheric pollution and emits virtually no greenhouse gases.

In line with the spirit of this original choice, Eurotunnel has always shown concern for the need to respect and enhance the environment, making it a priority, because it is crucial to the long-term future of its business and the future of all the sites involved in the operation of the Channel Tunnel. During the bidding, study and construction phases, Eurotunnel sought and opted for environment-friendly solutions, an initiative that has been voluntarily and resolutely pursued since commercial services started up.

An organisational structure dedicated to environmental protection has been set up. As part of the implementation of our environmental policy, an Environmental Management System (EMS) has been put in place and we work to control our impact on the environment in terms of:

- Monitoring and prevention of water pollution
- Monitoring and prevention of atmospheric pollution
- Energy management
- Management of waste and hazardous substances.

Going beyond the mere fulfilment of our obligations, the results of our efforts in the first ten years of operation show that the ecological balance of these sites is being satisfactorily maintained.

But Eurotunnel will not rest on its laurels and continues in the pursuit of excellence in environmental matters with the same level of commitment. The company intends to develop a real 'environmental culture', on the one hand by encouraging all its personnel to develop an awareness of environmental aspects in their day-to-day working and personal lives, and on the other hand by encouraging initiatives capable of extending the scope of environmental protection and renewable energy use beyond regulatory requirement levels and the strict geographical limits of the company.

Protection of the environment is now a sustainable value for Eurotunnel.

1 **INTRODUCTION**

1.1 **Eurotunnel's activities:**

Eurotunnel is a bi-national (Anglo-French) company which has a Concession to manage and operate the Channel Tunnel until December 2086. As a transport operator, Eurotunnel operates its own shuttles: 9 car and coach shuttles and 16 truck shuttles. As an infrastructure manager, Eurotunnel ensures the safe, efficient passage of trains belonging to various rail operators: passenger trains (Eurostar) and goods trains (SNCF, EWS).



In 2004, an average of some 350 trains and shuttles travelled through the Channel Tunnel every day, carrying some 45,000 people, 6,000 cars and coaches and 3,500 trucks. The Group employs 3,250 people directly and its activities also create jobs for sub-contractors at the Terminals.

1.2 **An environment-friendly design concept**

The environmental dimension was a decisive factor in the French and British governments' choosing the rail tunnel project put forward by Eurotunnel: the Channel Tunnel consists of an entirely underground link that does not interfere with the marine environment in any way and does not involve any kind of structure either above or below the sea.

1.3 **Building with conservation in mind**

During the study and construction phases, Eurotunnel was anxious to ensure that the work had a positive impact on the environment. The only visible legacy now of the construction phase is the places where the chalk extracted during boring has been used to form new landscapes.

In France, the Fond Pignon site, a barrage formed from 5 million cubic metres of earth extracted by the tunnel borers during construction, has been replanted by Eurotunnel and is now a nature reserve, fully integrated into the landscape of Cap Blanc-Nez. The site is popular with migratory birds and ecological management has been entrusted to the French coastal conservation authority, the Conservatoire du Littoral.



Similarly, in England, Saphire Hoe, a tract of land formed from 5 million cubic metres of chalk extracted during the Tunnel's construction and added to the British landmass, has been turned into a nature reserve extending over more than 30 hectares between Dover and Folkestone. The site forms part of the White Cliffs Countryside Project and now provides a habitat for around 120 species of plants, 80 species of birds and over 200 species of invertebrates. It is a major tourist attraction in itself and receives more than 120,000 visitors a year.

During the study and construction phases, archaeological digs also led to the discovery of thousands of objects and remains indicating a human presence between the Neolithic Age and the Middle Ages.

The prehistoric Biggins Wood in Kent was entirely relocated, the route of the Tunnel was changed to preserve the geological interest of the hill near Holywell Coombe, over 250,000 trees and shrubs were planted on the sites, and somewhere in the region of a hundred technical studies were carried out on the fauna, flora and geology.

In parallel, looking ahead to the operational phase, Eurotunnel undertook numerous environmental studies and forged close links with the various organisations responsible for environmental protection, as well as the local authorities and all parties concerned.

Architectural studies were carried out prior to the construction of the Terminals, the aim of which was to reduce their visual impact by seeking to balance built areas and green spaces.

Eurotunnel's French Terminal is part of an integrated development zone, or Zone d'Aménagement Concerté (ZAC), and the English Terminal is next to a Site of Special Scientific Interest (SSSI). This is why the company has made every effort to integrate the transport system and related activities into the landscape and protect the local environment by limiting noise pollution as far as possible.



← In France: Coquelles (Pas-de-Calais) = 700 hectares in an integrated development zone (ZAC)

→ In England: Folkestone (Kent) over 170 hectares next to a Site of Specific Interest (SSSI)



Eurotunnel has dealings with a large number of organisations and groups around its sites on both sides of the Channel. The company has undertaken to engage in active dialogue with all parties involved (public authorities and residents in particular) and accepts its responsibilities as far as the environment is concerned.

Eurotunnel's involvement in environmental matters through its construction and development activities was envisaged from the start of the project.

Cover of a brochure published during the construction in 1992

The decision to have the French site officially classed as a ZAC was taken voluntarily to ensure that the infrastructures connected directly or indirectly with the Channel Tunnel were beyond reproach in terms of both technical quality and integration into the environment around Boulogne and Calais.

- The 1992 ZAC application dossier includes a section dealing with environmental issues, thus anticipating the notion of sustainable development.
The in-depth environmental impact study was therefore preceded by the ZAC application dossier for which a full report on the hydro-geological environment, vegetation and wildlife was required.
Investigations were carried out into the water system, vegetation, wildlife and landscape.
The progress of work inside the Tunnel and its necessary impact on the surrounding area were closely monitored by the French government department concerned.
- When the ZAC was created, sizeable areas of land (e.g. Fond Pignon) were made available to the Conservatoire du Littoral by way of compensation for the land occupied by Eurotunnel's activities:
 - Landscaped areas (Carrefour de La Laubanie)
 - Almost 40% of the ZAC is occupied by green spaces.
- On the ecological front, the Jardins du Point du Jour were created, serving as a conservation area for hawthorn and willow plantations, with man-made lakes, watergangs (drainage ditches), newly planted reed beds, 'mature' meadow and a wealth of plant life. The gardens help to increase the population of nesting water birds, maintain a diversity of birdlife and provide a stopover site for migratory birds.
- Sustainable development concerns were taken into account in the building of facilities and superstructures:
 - Environmentally-sound building (Habitat 62/59 offices)
 - Solar heating in Accor hotels.
- As far as new development projects are concerned, the architect of the golf course to be sited in the new Sangatte leisure area will be required to apply the 'Commitment to Green' standard.

1.4 **Environmental achievements**

Eurotunnel and the White Cliffs Countryside Project (WCCP) work in partnership to manage and develop Samphire Hoe and the Folkestone Escarpment. This joint venture has been recognised by a number of awards:

- Property Awards (Environment category) sponsored by *Property Week*.
- Environmental Awards for Kent Business (Site Management and Nature Conservation category) sponsored by Kent County Council.
- National RICS Award for Countryside & Coastal Regeneration sponsored by the Royal Institute of Chartered Surveyors.
- Site of Special Scientific Interest Award sponsored by English Nature.

Eurotunnel's environmental efforts have been recognised in the UK where it is listed in the FTSE4Good Index, the ethical stock market index.

2 ORGANISATIONAL STRUCTURE

Eurotunnel has a clearly defined organisational structure to effectively manage environmental issues.

2.1 Board of Directors

Eurotunnel's Board of Directors supervises environmental issues through the Safety, Security and Environment Committee, comprising one executive director and two non-executive directors. It is the responsibility of this committee to keep under review matters that may have a significant impact on environmental management.

2.2 Safety, Quality, Health and Environment Division

Within the management structure, the Safety, Quality, Health and Environment Division reports to the Chief Executive and is responsible for environmental policy implementation and monitoring. An Environmental Management System based on the ISO 14001 standard provides the framework for planning, implementing and monitoring environmental protection initiatives.

2.3 Health and Environment Committee

A Health and Environment Committee reviews the monitoring of air and water quality (both in the tunnels and on the terminals); the prevention of air and noise pollution; waste treatment and disposal. Members of the Health and Safety Committee (HSC) in the United Kingdom and the Comité d'Hygiène, de Sécurité et des Conditions de Travaux (CHSCT) in France may attend Health and Environment Committee meetings as necessary.

2.4 Environmental Co-ordinator and Correspondents

An Environmental Co-ordinator is responsible for the implementation of the Environmental Management System across the company through a network of Correspondents based in the different operational entities.

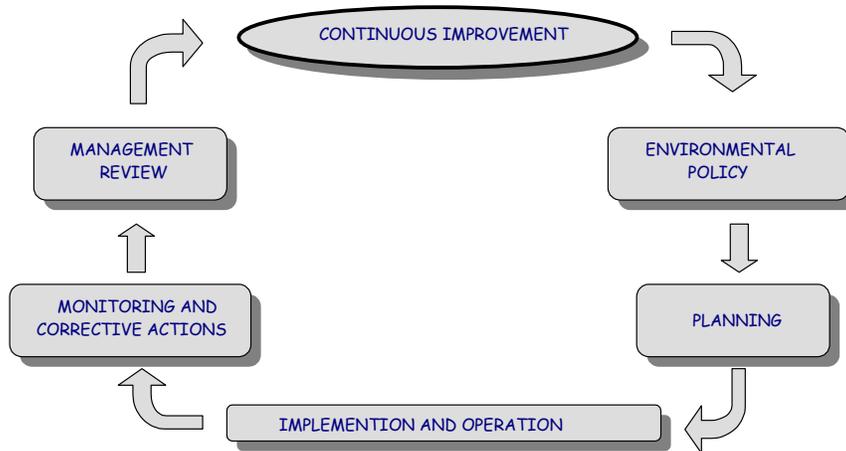
Every member of staff is made to feel a part of this organisational structure to encourage them to develop an awareness of environmental aspects in their day-to-day working lives and extend the scope of this awareness into their personal lives too, going beyond the regulatory requirement levels and the strict geographical limits of the company.

3 **ENVIRONMENTAL MANAGEMENT SYSTEM AND APPROACH**

In 2004, Eurotunnel continued the process of setting up an Environmental Management System (EMS) based on the requirements of the ISO 14001 standard, with the aim of continually improving environmental performance and controlling the actual or potential environmental impact of its operations.

The company's environmental approach is now systematically integrated into its quality management and safety approach.

The EMS philosophy can be illustrated as follows:



3.1 **Environmental policy**

The aims of Eurotunnel's environmental policy are the same in 2004 as they were in 2003. The main focus is on:

- Continuous improvement of environmental management and the SME
- Regulatory compliance
- Pollution prevention
- Voluntary communication with the public.

3.2 **Planning**

3.2.1 **Environmental priorities**

The priorities identified by the Health and Environment Committee in 2003 still apply and include:

- Updating environmental assessments,
- Optimising energy management strategy,
- Optimising Halon gas consumption management.

3.2.2 **Environmental assessments**

The site's environmental assessments were updated in 2004. This has made it possible to identify and implement new improvement initiatives, including:

- Updating the procedure for identifying significant environmental aspects and impacts: the major change has been redefining environmental impact scoring criteria making ranking easier and more tailored to Eurotunnel's organisational structure.
- The exhaustiveness of environmental assessments: every Eurotunnel activity (administration, maintenance, operation) has been thoroughly assessed thanks to the efforts of the environment correspondents in each section.

Through their involvement in the updating process, all the key players (managers, team leaders and key personnel) have become more aware of our environmental initiative. The process was underpinned by the idea of accountability and ownership of assessments by the staff and was carried out as follows:

- Brief presentation on standard ISO 14001,
- Explanation of specific terms used in environmental assessment (in particular "environmental aspect", "environmental impact", etc.)
- Analysis of the section's activities in small working groups typically comprising:
 - The environment correspondent for the section
 - The person in charge of the section (manager, team leader)
 - One or more key technicians: "key" meaning anyone whose work is likely to have a direct effect on the natural environment
 - Anyone else in the section being assessed who wishes to take part.
- Scoring of environmental impacts: guided by the environment correspondent using scoring criteria and in consultation with the members of the working group.
- Harmonisation of all the assessments by the environment coordinator: this primarily involves harmonising scores to optimise the ranking of the significant environmental impacts identified.

3.2.3 Regulatory compliance

Eurotunnel has a system in place to monitor compliance with existing statutory requirements and to anticipate the impact of future requirements.

3.3 **Implementation and functioning**

3.3.1 Employee awareness

All employees have a role to play in our environmental initiative. All employees have access to the Environmental Report and subcontractors too are informed of the environmental requirements applicable on site.

Environmental information is disseminated by various different means:

➤ Intranet site

Eurotunnel has developed an Environment Intranet site, a communication tool to provide all staff with the following information:

- Minutes of Health and Environment Committee meetings
- Presentation on ISO 14001
- Environmental resources (organisational structure, tip of the month, annual report, etc.)
- Awareness of environmental aspects
- Awareness of waste management
- Facts about energy conservation
- Ongoing environmental initiatives.

➤ In-house newsletters

Articles on environmental good practice are regularly published in the company's newsletters.

The following articles appeared in 2003:

- Butterfly and orchid species return to Folkestone
- Eurotunnel comes to the aid of birds affected by oil pollution
- Return of a rare species of butterfly
- Everything you always wanted to know about orchids
- Putting the environment first
- Wind farm project
- Flora and fauna in the yard on the UK side

-
- Waste sorting campaign at the Coquelles Terminal

Articles covering the following topics appeared in 2004:

- A new structure at Samphire Hoe
- Helping to waste less paper
- Update on wind farm project
- Maintenance = Cost! Are you sure? (article on energy conservation)
- Samphire Hoe is one of the best
- Sorting and recycling publicity campaign until April
- The cheapest energy is energy not used (interview with Eurotunnel's Energy Saving Committee)
- Rare visitors attract birdwatchers to Samphire Hoe.

➤ Training

An environment module has been included in Eurotunnel's induction training course for all new recruits since 2000.

In 2003, employees involved in environmental issues took part in courses offered by outside organisations.

In 2004, initiatives were taken to raise awareness and remind staff about environmental issues.

➤ Team meetings

An "Environment" item has been included on the agenda at team meetings to discuss various environmental issues such as:

- Waste sorting
- The EMS
- Good environmental practice (chemicals kept in storage tanks, chemical compatibilities, energy conservation, etc.)
- The environmental problems encountered by the teams.

3.3.2 External relations

➤ Relations with the Environment Agency and the DRIRE

Eurotunnel has forged links with external bodies such as the UK Environment Agency which has carried out inspections on the UK Terminal and the Nord-Pas-de-Calais subdivision of the DRIRE, the French regional authority concerned with industry, research and the environment.

➤ Relations with ADEME (Agence de l'Environnement et de la Maîtrise de l'Energie):

Eurotunnel and ADEME, the French Environment and Energy Management Agency, have held several meetings on the following main topics:

- energy conservation
- renewable energies
- and raising staff awareness on these issues.

A partnership project is being considered.

➤ Relations with ATEE (Association Technique Energie Environnement):

ATEE, which is a French association for technical, energy and environmental matters, brings together all the players professionally concerned with energy and environmental issues. Its role is to alert and inform on the latest technical innovations, cost and tariff developments and changes in national and international regulations. It is this which decided Eurotunnel that it would be in its interest to become a member of this association.

➤ Relations with neighbouring communities

Eurotunnel has taken part in a number of initiatives to foster relations with neighbouring communities, the main ones being:

- Installation of equipment to measure wave crest lines at Samphire Hoe (a European research project), as well as improving access and establishing new footpaths

- Active participation in monitoring noise levels generated by Eurotunnel activities affecting residents (self-monitoring, surveys of sound levels around the Terminals, etc.)
- In the Folkestone Escarpment and Holywell areas, introduction of a management plan to improve public access and promote the site's ecological value
- Adoption of environmentally-friendly farming methods in the Farthingloe area.

➤ Club ISO 14001

The Club provides an opportunity for companies to exchange information and is a useful source of feedback. It also offers advice on ISO 14001.

Eurotunnel has opted to play an active part in local business by joining this Club.

Eurotunnel has taken part in the following working groups:

- Emergency situations
- Operational control
- Visit to Les Enrobés de Marquise, a company in Nord-Pas-de-Calais implementing an environmental management policy

➤ Participation in the debate on the French Environment Charter



2003 also saw Eurotunnel participating in the big democratic debate on the Charte de l'Environnement launched by the French Ministry of the Environment and Sustainable Development. The initiative was an opportunity for experts and citizens to put heads together and lay new foundations for a humanistic form of environmentalism and a new relationship between humans and nature.

➤ Environmental Report and Annual Report

Eurotunnel published its first Environmental Report on its web site in 2003.

An Environment section is also included in the Group's Annual Report. Press releases dealing with environmental matters are also available on the web site.

3.3.3 Documentation system

The specification of the documentation part of the EMS was completed in 2003. The process of ensuring that all staff give the EMS more consideration in their operational documentation continued in 2004 and is still ongoing.

3.4 **Monitoring and corrective action**

The main operations and activities that have a significant environmental impact are monitored especially carefully. Monitoring environmental performance enables us to judge the performance of the EMS.

A system for managing and ultimately eliminating environmental shortfalls was implemented in the last quarter of 2003.

In 2004, a dummy audit was carried out on Eurotunnel's Environmental Management System. Lasting a day, it confirmed that the EMS's foundations were solid and highlighted possible areas of improvement. In addition, the 2004 management system audit plan included Environmental elements based on the requirements of ISO 14001.

4 **REGISTRATION UNDER FRENCH ENVIRONMENTAL PROTECTION LAW**

In France, a number of facilities at the French Terminal and at the Sangatte site are registered under the French law relating to facilities registered for environmental protection purposes (ICPEs) (Law no. 76-663 of 19 July 1976). Originally, Eurotunnel France was divided into two ICPE sites for administration purposes: the French Terminal and the Sangatte site.

The facilities affected are:

- Tunnel cooling plant
- Repair and maintenance workshops for vehicles and power-driven equipment
- Preventive maintenance workshop for its compressed air facility
- Storage and use of CFCs
- Liquefied combustible gas stores
- Battery charging workshops

Eurotunnel has, at the appropriate time, made the necessary declarations or obtained the required permits for these facilities.

In addition, Eurotunnel has put in place a system to identify and manage any modifications to existing registered facilities or the creation of new facilities or activities requiring registration under this legislation.

These regulations do not apply to the UK Terminal.

4.1 **Consolidation on the French Terminal site**

In 2001, given:

- what has happened in the past with some of its activities affected by French environmental protection regulations (closing down, expansion) and what could happen with them in the future, and
- the changes in the regulations affecting registered facilities,

Eurotunnel wanted to work with the DRIRE to put forward a case for consolidating its activities that are subject to these regulations.

The case was prepared by Eurotunnel in 2002.

In early 2003, Eurotunnel's Comité d'Hygiène, de Sécurité et des Conditions de Travaux (CHSCT) was consulted then the case submitted to the Préfecture du Pas-de-Calais for consideration.

A public inquiry was held in late 2004.

In 2004, Eurotunnel answered all the comments made during the public inquiry and the case was passed on to the DRIRE.

As a result of Eurotunnel's good working relationship with the DRIRE, strengthened by a full inspection of the site, and incorporating the first version of the future bylaw, it is planned to submit the case to the Comité Départemental d'Hygiène (CDH) in early 2005 with a view to obtaining a new bylaw during the course of 2005.

4.2 **Inspection by the DRIRE**

As part of a national campaign, the DRIRE inspected Eurotunnel's cooling facilities on the Sangatte site in 2002. The inspection report concluded that these facilities were compliant with the regulations concerning refrigerants (Decree 92-1271 of 7 December 1992) and the bylaw relating to Eurotunnel's operations on this site.

In 2003, Eurotunnel carried out an audit of the subcontracting operation responsible for maintaining its rolling stock air conditioning systems using the method used previously by the DRIRE.

There are no significant changes to report in 2004.

4.3 **Nitrite storage capacity at the Sangatte site**

Cooling at the Sangatte site is subject to a permit.

Deleted: Elle permettra à Eurotunnel d'obtenir un arrêté préfectoral unique intégrant les modifications projetées de ses installations classées.

Following the letter from the DRIRE dated 25/07/02 requesting that our nitrite storage capacity be brought into line with the regulations, modifications were made to the storage tank early in 2003.
This situation remained unchanged in 2004.

5 **MONITORING AND PREVENTION OF WATER POLLUTION**

5.1 **Drinking water and fire-fighting water**

French Terminal:

Even before construction began it was decided that the scale of the installations and buildings on the French Terminal warranted a common drinking water and fire-fighting water network.

A 30km network supplies drinking water to the French Terminal installations and fire-fighting water to the entire infrastructure (approximately 115 fire hydrants).

This network is supplied by SMOC (Syndicat Mixte de l'Ouest du Calais) and is backed up by an emergency supply from a 500 m³ reservoir.

In 2004, the French Terminal's consumption was 137,444 cubic metres, representing an average daily consumption of 375 cubic metres.

Sangatte Shaft:

The Sangatte shaft is supplied by the Sangatte town network (Eaux de Calais).

In 2004, consumption was 29,469 cubic metres, representing an average daily consumption of 80 cubic metres. The fall in consumption over the last two years reflects the closure of the Red Cross reception centre for migrants.

Projects

A project for recycling water from Eurotunnel's UK and French cooling plants was initiated. It is estimated that between 5,000 and 10,000 cubic metres of water a year would be saved by such a scheme. A feasibility study looking at the technical and financial aspects of the project is currently underway.

5.2 **Stormwater**

At the French Terminal, Eurotunnel actively contributes to the preservation of the hydraulic 'wateringues' system, a local drainage system for protecting the Calais/Dunkerque/Saint-Omer coastal plain, which is below sea level at high tide.

The network of 'wateringues' (from 'water' and 'rings'), created in 1169 by Philippe of Alsace and perfected over the centuries, controls the flow of water by:

- Making dams to prevent the entry of sea water at high tide
- Draining the land via channels (watergangs)
- Allowing surface water to flow into the sea
- Retaining fresh water in dry periods.

Eurotunnel took this historical local feature into account in the design of the French Terminal: watergangs (drainage ditches) and streams were created following an hydraulic survey (according to wastewater discharge bylaw of 28 July 1988). The hydraulic systems put in place by Eurotunnel control the flow of water on and off the Terminal.

Eurotunnel continuously monitors the pH, temperature and ratio of suspended solids in the wastewater discharged in order to ensure compliance with water quality standards.



At the UK Terminal, in 2002 Eurotunnel employed a laboratory to conduct a full analysis of surface water at the discharge point and the results were satisfactory. Stormwater and wastewater drainage systems have been mapped for the entire site.

During 2003, a monthly water quality check was introduced at the stormwater discharge point at the UK Terminal upstream of the point of discharge into the sea. The stormwater drainage system has been mapped for the entire Terminal.

5.2.1 Analysis results

Eurotunnel made further improvements to the monitoring of its water quality self-regulation systems in 2003, affecting two of the four storage reservoirs designed to regulate the flow rate and control the quality of surface water discharged into the sea.

In France, the 2004 analysis results for discharges met the required standards:

(24h average)

Odour: none
Colour: visible coloration of receiving water
PH: 5.5 to 8.5
Temperature: < 25°C
Suspended solids: < 30 mg/l
Hydrocarbons: < 1 mg/l

In the UK, the quality of discharges was also compliant with the standards.

5.2.2 Volumes discharged

As a result of the introduction of a monitoring system on the French Terminal, it is now possible to obtain precise data on the volumes discharged into the natural environment.

- Lagoons n° 2 and n° 3: The volume discharged was 3,415,714 cubic metres for the period 1 July to 31 December 2004. The figures are not for the full year but from the time the monitoring system was introduced.
- Lagoon n° 4: The total volume discharged in 2004 was 1,039,472 cubic metres.

Eurotunnel pumps out groundwater to keep the water level below rail level at the low point in the Beussingue Cutting (tunnel entrance). The charge payable to Agence de l'Eau Artois-Picardie has hitherto been based on the theoretical pumping volume, but the installation of a metering system will now make it possible to know the exact quantities pumped out and adjust the charge accordingly.

5.3 Wastewater



The urban biological purification plant built by Eurotunnel in France has a nominal capacity equivalent to a population of 13,500 people. This plant treats the wastewater from the Eurotunnel Terminal as well as from Coquelles and the nearby development area. An agreement was signed on 9 January 1996 to treat wastewater from the Coquelles commune, particularly that produced by the Cité Europe development.

In 2004, wastewater discharge quality at the plant remained in compliance with the regulations. Performance data is available on the Agence de l'Eau

Artois-Picardie website: www.eau-artois-picardie.fr

The volume of wastewater treated at this plant in 2004 was 261,324 cubic metres.

In 2004, the system of remote monitoring at the lift stations bringing wastewater to the Terminal's purification plant was replaced for greater reliability.

In view of the ongoing development of the ZAC, Eurotunnel has also carried out a long-term study of the plant's processing capacity. This has established that the plant, as it stands at the moment, will be capable of collecting wastewater from Eurotunnel's French Terminal, part of the Coquelles commune and the neighbouring development area until 2007, taking into account the development plans already tabled.

Introduction of the monitoring system has made it possible to know the volume discharged at sea. Discharges to sea are monitored in accordance with the bylaw and quality analyses are carried out at every discharge point. The volume discharged to sea in 2004 was 52,800 cubic metres.

5.4 Sludge

The sludge extracted from the purification plant amounts to some 150 tonnes of dry matter per year before the addition of lime to stabilise it (at the level of 28% of the dry matter), i.e. 800 tonnes of raw sludge per year.

In early 2003, Eurotunnel was given the go-ahead to spread sludge from the purification plant on:

- Three farms on land in Coulogne, Sangatte, Peuplingues and Coquelles, representing a total area of 177 hectares
- Temporary meadows on Eurotunnel's land representing an area of 19.5 hectares (this land can be used to spread liquid sludge as opposed to limed sludge, so helping to reduce the amount of chemical fertilizers in the soil).

During 2004, the sludge extracted from the purification plant amounted to 549 tonnes of limed sludge for spreading on farm land and 1997 cubic metres of liquid sludge for spreading on poor soil on the site.

The liquid sludge produced from the purification plan has been spread on the site to enrich the soil and reduce the amount of fertiliser used on this land.

5.5 Truckwash at Eurotunnel's Ashford truckstop

The Eurotunnel Truckstop at Ashford, originally owned by Eurotunnel, is used by both cross-Channel and local transport operators. It welcomed more than 200,000 vehicles in 2003.

A truckwash equipped with electronic sensors, for all commercial vehicles from vans up to 44-ton trucks 4.7 metres high, was opened at the Truckstop in October 2003. The 4-minute wash cycle entails a combination of high-pressure jets and rotary brushes. This environment-friendly, state-of-the-art truckwash is capable of washing up to 15 trucks an hour and recycles 75% of the water used; the suspended solids are filtered by gravity in a 3-stage process resulting in 15-micron particles. The water is then recycled in the washing process and running water is used only for the final rinse.

In 2004, Eurotunnel sold the Truckstop to an outside company.

6 **MONITORING AND PREVENTION OF ATMOSPHERIC POLLUTION**

6.1 **Electric vehicle fleet**

Eurotunnel mainly uses electric vehicles in the service tunnel to minimise exhaust emissions.

In 2004, the fleet comprised thirty or so vehicles. However, the manufacturer has stopped producing this type of vehicle so regrettably it may be necessary to use conventionally-powered vehicles in the future.



6.2 **Noise pollution**

Measures to protect residents from noise nuisance were taken during construction and have continued since the Tunnel was opened. These include:

- Building a covered loop at the UK Terminal
- Building an embankment around the Sangatte site
- Soundproofing dwellings on the UK side.

Noise surveys designed to minimise noise pollution are carried out for every new project or modification to existing facilities.



In France, the Côte d'Opale Flandre SPPPI (Permanent Secretariat for Industrial Pollution Prevention) commissioned a study in 2001 to assess the level of noise nuisance to which the populations of neighbouring Fréthun, Coquelles and Peuplingues were exposed. The study concerned Eurotunnel, DDE (French regional government department which manages large urban development, road and rail projects), SNCF (French national railways) and EDF (the French national electricity company).

The report from this study, published in late 2001, indicated that Eurotunnel's installations were within the regulations for permitted noise levels at the boundary of

residents' properties and at the boundary of territory occupied by Eurotunnel's road and rail facilities.

Eurotunnel has nonetheless continued to explore ways of further reducing noise levels.

The following steps have been taken on both sides of the Channel to control the way messages are delivered by loudspeaker:

- The public address (PA) system is no longer used between 22h00 and 07h00 except in emergencies.
- Care is taken to ensure that messages delivered inside the Passenger Building are not simultaneously delivered outside.
- The PA system is not used even during the day when there is a strong wind blowing, since announcements are generally inaudible in such conditions.

In August 2003, the Administrative Court in Lille, at the request of a local resident, appointed an expert to assess noise levels in the vicinity of the motorway slip road leading to the Freight Terminal in the Dunkerque/Calais direction. The results of this assessment have not been communicated to Eurotunnel at the time of writing.

Eurotunnel also organised meetings to inform residents about proposed plans to site a multimodal container terminal at the existing Folkestone Terminal. This project has now been abandoned.

6.3 **Greenhouse gas emissions**



Eurotunnel uses electricity for locomotive power and makes only minimal use of fossil fuels, the principal cause of greenhouse gas emissions.

6.4 Ozone-depleting gas emissions

6.4.1 Halon

Halon is used as a fire extinguisher on the passenger rolling stock fleet and in certain rooms.

Owing to the specific nature of its activities, Eurotunnel has a special dispensation under Regulation (EC) No. 2037/2000 of the European Parliament and the Council of 29 June 2000, to continue using Halon in the Tunnel, related facilities and rolling stock. This dispensation was confirmed by a decision of the European Commission of 7 March 2003 amending Regulation (EC) No. 2037/2000 of the European Parliament concerning the use of Halon 1301.

Eurotunnel has organised management of its Halon consumption through the setting up of a Halon Committee comprising the Environment Co-ordinator and the people responsible for maintenance of the fire extinguishing systems.

Since March 2000, Eurotunnel has been systematically monitoring Halon consumption, identifying the causes and taking action to significantly reduce consumption.

Other major initiatives have been implemented. These include:

- establishing a stringent Halon management and control procedure
- the proposed upgrading of existing installations
- constantly investigating alternatives to Halon.

Eurotunnel is endeavouring to use inert gases such as inergen and aragonite in all new installations whenever possible. These are environmentally safe and extinguish fires by reducing the oxygen level.

6.4.2 Freon

Freon (HCFC.R22) is used in the Tunnel cooling systems, rolling stock air conditioning units and air conditioning in buildings.

Eurotunnel's refrigeration experts ensure compliance with EC Regulation No. 2037-2000 and the French Decree 92-1271 of 7 December 1992 (amended), relating to certain refrigerants used in cooling and air conditioning equipment, focusing on our cooling plants in France and the UK, buildings and air conditioning units in buildings and on rolling stock.

In 2003, Eurotunnel carried out an audit of the subcontracting operation responsible for maintaining the air conditioning units on its trains, in accordance with French Decree No 92-1271.

In 2004, Eurotunnel continued using substitute products, such as HFCs (R134a), for new equipment.

6.5 Improving air quality in the Tunnel

In 2004, ongoing actions to reduce or prevent air pollution have continued and further initiatives with the same aims promoted.

Since November 2004, Eurotunnel has been using a special rail grinding train which has a module that collects dust and grindings, thus improving air quality in the Tunnel.

7 **ENERGY MANAGEMENT**

Eurotunnel considers energy management to be a key element of its corporate strategy. This is reflected in its constant efforts to find innovative solutions to reduce its energy consumption.

A notable aspect of this strategy is the active role the Company is playing in achieving the objectives of the French Ministry of Ecology and Sustainable Development in relation to the reduction of greenhouse gases.

2004 was a fundamentally important year for energy saving.



Total annual energy consumption for Eurotunnel's operations in 2004 stood at around 588 GWh (of which 75% in locomotive power) and power demand at around 51 MW for traction and 10 MW for the auxiliaries.

7.1 **Specific organisation**

In the first quarter of 2004 Eurotunnel introduced a specific organisation to drive forward its policy for managing and reducing energy consumption. It comprises the following entities:

- Energy Group: centralises the consumption of water, electricity, gas and fuel and manages all the contracts related to energy usage.
- Energy Saving Committee: develops strategy relating to energy saving and is the originator of several new initiatives such as:
 - An energy audit: after a preliminary energy audit in 1998 to identify the main areas where improvements could be made, a full audit was carried out in mid 2004 to:
 - Check implementation of the initial 1998 recommendations
 - Define new opportunities for improvement.
 - An investment programme.
 - "Eco-energy" pages on the Calais Intranet website to raise staff awareness about energy saving. The pages describe:
 - The Committee's organisational structure
 - Its actions
 - Its projects
 - Technical articles on installations on the Eurotunnel site.
 - Conference papers and publications aimed at energy professionals.

7.2 **Major achievements**

Eurotunnel is committed to energy conservation and this is reflected in its various initiatives, including:

- The progressive upgrade of part of its locomotive fleet to 7 MW for operational reasons has also resulted in improvements in energy efficiency.
- Installation of remote systems for measuring electrical and hydraulic usage on the site in order to identify the main consumers, optimise consumption and evaluate the cost savings.
- Reduction in the number of bulbs used in zones requiring low lighting and reducing by half the number of fluorescent tubes on the bridges to the shuttles.
- Automatic switch-off of lights in the terminals using twilight sensors.

-
- Optimisation of the use of electrical heating in the maintenance workshops using presence detection controlled from an engineering management centre.

7.3 Purchasing electricity

When the latest electricity supply contract was drawn up in 2003, the supplier agreed to participate in the development of software to refine Eurotunnel's power consumption forecasts.

Development of this software continued in 2004.

7.4 Developing renewal sources of energy

In 2003, Eurotunnel signed an agreement relating to the installation of a wind farm at the Coquelles Terminal in France. Subject to the necessary planning consents, six 2MW wind turbines are to be installed and operated by outside companies specialised in wind farm design and operation on land owned by Eurotunnel near the passenger entrance to the Terminal. The electricity generated, sufficient to supply a population of 11,000 people, would be purchased by the French electricity company, EDF, and integrated into the national grid. The wind farm project is evidence of Eurotunnel's commitment to sustainable development and the use of renewable sources of energy.



Wind farm project in France (Photo-montage)

Key figures:

- Power rating of each turbine: 2MW
- Total electricity generated equivalent to power requirements of 11,000 people.
- 3-blade rotors.
- Can withstand wind speeds of up to 300kmph.
- Tower height: approx. 65m

In 2004, the outside companies submitted the project for planning permission.

7.5 Contacts

Eurotunnel forged contacts in 2004 with ADEME, the French Environment and Energy Management Agency with a view to advancing ongoing initiatives.

Eurotunnel is also a member of ATEE, an association for technical, energy and environmental matters which brings together all the players professionally concerned with energy and environmental issues.

Eurotunnel belongs to the EDF Business Club which brings together EDF's biggest customers in the region to discuss issues relating to the energy market, maintenance, etc.

In 2004, Eurotunnel organised a visit to its site by Club members to show them its installations and attend a presentation and discussion on the theme "*industrial competitiveness and sustainable development*".

8 **WASTE MANAGEMENT**

Eurotunnel seeks to continuously improve its performance in terms of environmental management and to this end an industrial waste management programme has been developed to deal with special industrial waste (batteries, solvents, brake pads, fluorescent tubes, asbestos, etc.) and ordinary industrial waste (scrap metal, vegetation, paper, rubble, tyres, etc.). A central waste storage area has been created at each Terminal and waste registers have been set up to monitor performance.

These initiatives have led to a continuous improvement in the conditions for storing waste prior to removal to its final destination and a reduction in the amount of waste generated.

8.1 **Waste sorting**

In 2002, Eurotunnel introduced the selective collection of special and ordinary industrial waste at the two Terminals.

Selective collection has necessitated an overhaul of all equipment and facilities, the modification of waste flows, the creation of a waste collection centre at the French Terminal and the modification of the existing water collection system in the waste storage area at the UK Terminal.



At both Terminals, all waste is collected and stored before being removed by specialist companies. Special industrial waste (paints, solvents, bulbs, batteries, etc.) and ordinary industrial waste are stored in a special holding area before being removed to specialist facilities for disposal. Industrial waste tracking notes provide evidence that the waste has been properly disposed of.

Since the system was first introduced, the results have been encouraging, the quantity of waste disposed of to landfill having been reduced by nearly half. The waste not sent to landfill is recycled or incinerated.

In 2003, Eurotunnel continued its drive to further optimise waste management, reduce the amount of waste produced and improve recycling.

In April 2004, the waste storage centre on the French Terminal was brought into compliance and made secure. This involved:

- Creating a watertight bay for receiving liquid waste
- Installing an oil interceptor
- Installing a metal curtain to close off the shed for storing special wastes
- Installing external lighting in the waste centre
- Providing a secure cupboard for storing toxic waste in dispersed quantities (TWDQ).

8.2 **Survey to measure the efficiency of waste sorting at the French Terminal**

Since 1st July 2002, only ultimate waste can be disposed of at waste storage centres. The aim of this legislation is to recycle materials as far as is technically and economically feasible at the time.

Random waste characterisation is carried out at the final disposal site (CSDU in Dannes).

In June and September 2003, Eurotunnel's main subcontractor for waste disposal carried out a survey to measure the efficiency of waste sorting on three of the site's ordinary industrial waste compactors, located near the passenger building, the store and on the waste loading/unloading platform. The percentages of waste incorrectly sorted were as follows:

- Passenger building: 2%, consisting mainly of packaging film, was suitable for recycling
- Store: 5% was suitable for recycling (paper, board, packaging film)

- Waste loading/unloading platform: none was suitable for recycling.

These results were satisfactory, not to say excellent where the compactors are located in supervised areas (passenger building, waste loading/unloading platform).

In November 2003, action was taken:

- In the passenger building area, to salvage at source plastic film that should not be in the compactor
- In the store area, to make staff aware of the need to observe the existing sorting system.

In 2004, the waste sorting results had improved: 5% of undesirable waste in 2004 compared with 7% the previous year. This improvement reflects the strong environmental values that Eurotunnel wishes to promote and the efforts of each and every employee.

Eurotunnel has continued to improve its performances in waste management. Action has focused in particular on optimum segregation of waste for better sorting at source so that it can be directed to the appropriate recycling channel.

The improvements have resulted in new figures which stand at 59% of total waste sent to landfill, 12% incinerated and the remaining 29% recycled through:

- Sorting over 35 tonnes of office paper, 10% of which are confidential documents shredded on site
- Recycling 226 tonnes of metal, including some 100,000 drinks cans collected from the company's restaurants
- Recycling 91 tonnes of board and 5 tonnes of packaging film
- Waste-to-energy incineration of 27 tonnes of used oils
- Agricultural composting of 22 tonnes of green waste
- Reducing the volumes of hazardous waste
- Incineration, including some waste-to-energy incineration, of 12% of waste handled.

Eurotunnel is also applying the following French regulations: Decree n°2002-1563 of 24 December 2002 on tyres and Decree n°99-374 of 12 May 1999 on batteries.

8.3 Waste sorting publicity campaign at the French Terminal

In late 2003, a publicity campaign aimed at Eurotunnel personnel and subcontractors focusing on the sorting and processing (reuse, recycling, etc.) of waste was conducted in France in partnership with Eurotunnel's main waste disposal contractor. First, all personnel were invited to see an exhibition on the processing of different types of waste organised in different buildings over a 7-week period.



This was followed in 2004 by a campaign aimed at sharing with the staff the positive results achieved and focusing on future improvement opportunities. The same themes were covered in more detail on the Environment Intranet site which staff were encouraged to visit.



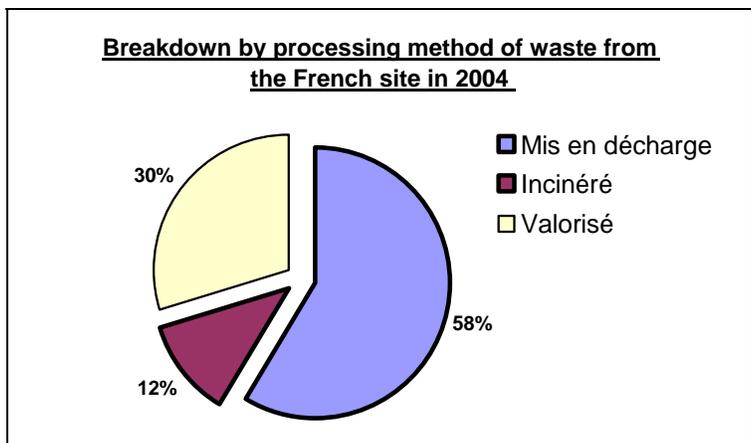
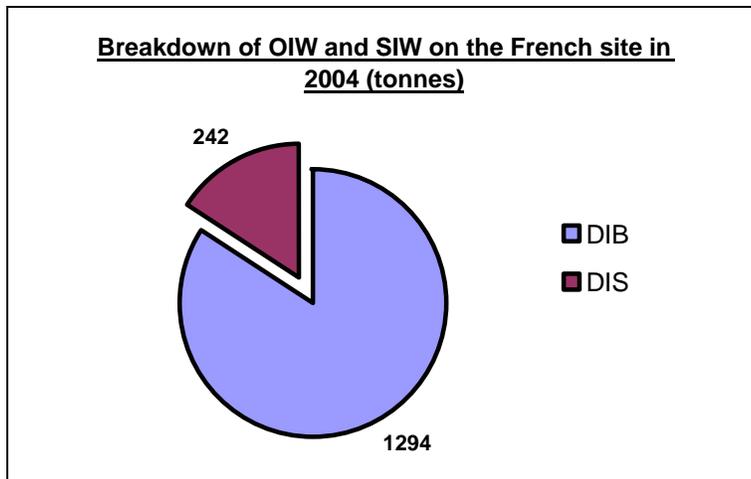
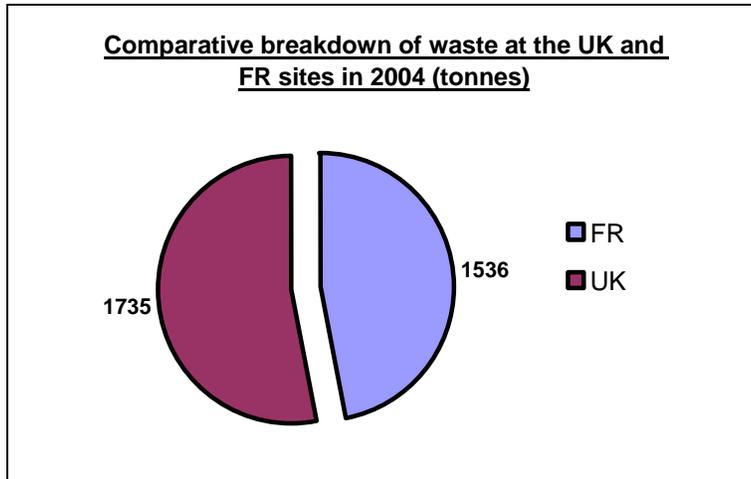
8.4 Waste register at the UK Terminal

Waste flow plans were put in place in all buildings on the French side in late 2002 to help staff to improve waste sorting. These plans were extended to the UK during 2003.

Also during 2003, a waste register in line with the European waste listing, identical to the one used in France, was introduced at the UK Terminal. Details of waste processing solutions at the UK Terminal were available in 2004.

A common waste management procedure has been available since late 2003.

8.5 Breakdown of waste



8.6 Information campaign on use of the electronic library

During 2004, an information campaign has encouraged all staff on the UK and French sites to make the most of the electronic library. It can be consulted by everyone and contains virtually all the main documents. It cuts down the volume of conventional archiving as well as significantly reducing paper consumption.

8.7 Corporate citizen and future progress

Eurotunnel's commitment to sustaining and developing waste sorting goes beyond simple concern for the environment and involves a strong element of corporate citizenship. Through waste initiatives it has also been possible to:

- Contribute to research into rare diseases: since 2002, approximately 750 empty printer cartridges a year have been bought by a recycler, netting 4360€ in three years for two charities: FRC, a brain research charity, and FFRE, an epilepsy research charity.
- Assist associations for the disabled: 10 cubic metres of end-of-life electrical and electronic equipment, i.e. more than 3 tonnes of equipment, has been collected by a training centre for the disabled which dismantles parts for recycling. This has helped to create jobs for people that need them (a tonne of equipment for recycling generates 35 working hours).
- Assist the charity "Solidarité France Afrique": 342 usable or broken wooden pallets have been recycled for reuse and sold on the second-hand market by a specialist recycler, netting the charity 363€

Other actions are planned to further improve waste management:

- Processing and recycling of aerosols: from SIW to metal
- Segregation of waste in three dedicated areas (OIW, SIW and liquid)
- Introduction of a reception structure
- Improved management of ordinary waste following redeployment of compactors
- Introduction of fast, flexible structures for chefs de chantier to use when on specific or ad hoc worksites.

9 **MANAGEMENT OF HAZARDOUS SUBSTANCES**

9.1 **Assessment of hazardous substances**

All hazardous substances are controlled from the time they are purchased until such time as they are disposed of.

Authorisation to use any new substance is systematically validated by:

- the Safety Department
- the Occupational Health Department
- the Environmental Department.

Assessment is carried out with a view to:

- Defining the environmental standards applicable to Eurotunnel (e.g. fire, smoke and toxicity aspects in the Tunnel)
- Laying down guidelines for the handling and storage of hazardous substances.

As a result of the assessment, recommendations relating to the use of such substances can be made.

9.2 **Compliance of storage areas**

Eurotunnel works to ensure that no hazardous substances are stored in buildings and makes it a rule that any accidental discharge or spillage of a hazardous substance is to be handled by trained staff or skilled subcontractors.

In 2003, the flammable liquid storage facility in France was brought into line with the recommendations.

The process involved:

- Meeting with operators
- Consolidating hazardous substances in the flammable substances facility
- Consolidated stock brought into line with recommendations.

Also in 2003, a significant proportion of the hazardous substances in storage was transferred to special storage tanks in accordance with capacity and incompatibility guidelines.

In 2004, Eurotunnel maintained its objective of storing all hazardous substances in storage tanks in accordance with capacity and compatibility guidelines.



9.3 **European Directives relating to potentially explosive atmospheres (ATEX)**

The aim of the ATEX Directives is to improve the health and safety protection of workers potentially at risk from explosive atmospheres.

Eurotunnel has implemented these Directives with the support of an accredited technical consultancy.

A maintenance building was chosen for the pilot study, which involved:

- Characterisation of substances
- Risk assessment
- Classification into zones.

Work began on ensuring compliance of all equipment on the premises in 2003, well in advance of the July 2006 deadline set by the EU.

The experience acquired will continue to be used in the future to deal with the other areas concerned.

10 **GREEN SPACES AND ECOLOGICAL BALANCE**

When the construction period was over, Eurotunnel adopted a policy for managing the green spaces on its land and set up a system to monitor the flora and fauna at both Terminals, with the aim of:

- Gaining a clearer insight into how the ecological balance of the natural environment evolves
- Understanding how both protected and unprotected animal and plant species evolve in their natural environment.

The ecological monitoring that has been carried out for several years now has demonstrated the tremendous heritage value of the UK and French sites. The results show that the number and diversity of species actually increased as Eurotunnel's activities were ramped up and have since remained stable.

The results obtained at the UK site are particularly favourable, not to say exceptional, as borne out by the recolonisation of wild orchids and rare butterflies.

10.1 **French Terminal**

10.1.1 **Monitoring wildlife at the French Terminal**

The Groupe Ornithologique et Naturaliste du Nord-Pas-de-Calais (GON), a local nature and birdwatching group, has been responsible for monitoring flora and fauna in the vicinity of the French Terminal since 1993. The group's main task is to monitor the development of the natural environment, drawing up an inventory of the birds encountered and potential sources of food.



They also measure water quality and help Eurotunnel to manage and improve the care of these habitats.



Ten years of monitoring have revealed a trend towards more common and urban species on the French Terminal site and this was confirmed by the 2003 survey. However, no link has been established with the clearance in 2002 of 50 hectares of bushes and undergrowth for security reasons to prevent asylum-seekers disrupting Eurotunnel's commercial services, this area not being included in the survey.

The 2004 report has not been communicated at the time of writing.

The ecological balance will continue to be monitored, chiefly by the GON.

10.1.2 **Controlling species at the French Terminal**

The French Terminal, because of the special nature of some of its infrastructures and its appearance, is an ideal place for certain species to proliferate. Some of them are however incompatible with the normal operation of the site or can pose a health risk and need controlling.

The main culprits are:

- Pigeons around the Sangatte shaft
- Corvids (Jackdaw, a protected species) at the G2 electricity substation
- Rabbits on wasteland around the French Terminal, particularly alongside the tracks
- Muskrats destroying embankments and tunnelling under the site.

Other species, such as foxes, stone martens, polecats, feral cats and weasels, are sometimes found on the site.

They are controlled by staff volunteers and a number of local organisations such as the Pas-de-Calais pigeon-fanciers' and game-shooters' clubs, public and aviation safety bodies and specialist ornithologists.

The control methods used vary according to the species:

- Protected species of birds are scared off using a range of deterrents
- Some species are captured and transferred to another site
- Others are culled.

All interventions are systematically recorded to identify any changes and find the most suitable methods of control.

In 2003, the Sangatte shaft and all the associated fire, ventilation, drainage and cooling installations, after cleaning and repainting, were restored to a satisfactory sanitary condition. A bird-scarer similar to those used at airports was installed at the electricity substation and the birds have stayed away.

In 2004, rabbiting was organised to control the damage caused to the embankments by rabbits. Forty-eight pigeons responsible for catenary outages were also captured. A rodent controller was brought in to limit the proliferation of muskrats around the lagoons and purification plant.

10.1.3 Upkeep of green spaces at the French Terminal

Eurotunnel is keen for the site to be perceived as a pleasant, ecologically sound environment, paying special attention to areas frequented or seen by the public.

These areas are managed differently according to their specific nature:

- One, covering 1,300 square metres, is planted with flowerbeds
- The other has a wilder, more conservation-oriented feel, limiting the visual impact of the concertina razor wire and perimeter fencing without compromising security.

The following key initiatives have been taken:

- The areas of pastureland on the site are cut by local farmers who thus benefit from good quality forage for their cattle. Before the grass is cut, wildlife checks are carried out, particularly to locate birds' nests.
- A scheme to spread sludge on agricultural land to reduce the amount of chemical fertilisers used.

In 2002, following a call for tenders, Eurotunnel decided to hand over the day-to-day upkeep of its green spaces (about 250 hectares) to a local training centre for the disabled. About fifteen of the centre's employees now work on the French site.

In 2004, the main work carried out was:

- Planting of flowerbeds on the Passenger Terminal
- Creation of large planted beds on the Freight Terminal and landscaping of the customer entrance roundabout
- Implementation of the scheme to spread sludge from the Eurotunnel purification plant to reduce the amount of chemical fertilisers used
- Weed cutting on the Point du Jour Lake (Passenger Terminal exit) to restore the original shape of the banks and control the invasive plant *Ludwigia Grandiflora*.

Clearing and chemical treatment of the vegetation along the railway lines are planned.

102. UK Terminal

Eurotunnel began active management of its land during the construction phase in 1988, including about 48 hectares on the Folkestone Downs near the UK Terminal and a further 30 hectares at the base of the White Cliffs of Dover (Samphire Hoe).

The main aim for each site was to:

- Improve the plant and wildlife value and public enjoyment of the site

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- Provide access for a broad cross-section of people and raise their awareness of environmental protection by encouraging them to take part in leisure pursuits such as walking, birdwatching and angling.

A joint co-operative venture called the White Cliffs Countryside Project (WCCP), involving Eurotunnel, local authorities, environmental bodies and local businesses, was set up in 1989. Its aim is to protect and conserve areas around Folkestone and Dover. It plays a key role in managing Eurotunnel's land in the United Kingdom.



Rare species of orchids such as the Early Spider Orchid (*Ophrys arachnitiformis*) and butterflies like the Adonis Blue (*Lysandra bellargus*) are now found on the Folkestone Downs and at Samphire Hoe



10.21 The Folkestone Downs

The Folkestone Downs are one of the largest remaining areas of ancient chalk grassland in Kent and form part of the Kent Downs Area of Outstanding Natural Beauty (AONB). They are also designated a Site of Special Scientific Interest (SSSI) on account of the many rare species of plants and wildlife they support.

When Eurotunnel acquired the land it had not been managed for some 30 years. Areas were becoming invaded by scrub, and coarse tor grass (*Brachypodium pinnatum*) was rampant, choking out the more delicate species of flora. Fencing had become dilapidated and flytipping and abandoned vehicles were becoming commonplace. There were a number of public footpaths that had become overgrown or unusable.

Eurotunnel and WCCP have restored and maximised the diversity of habitats on the site without detracting from its unique components. This was achieved mainly by the introduction of grazing cattle that control the coarse grasses, allowing the more delicate species to thrive. The 'on the ground' management is undertaken by WCCP, which enlists the help of volunteers to keep the area in good order. WCCP also organises guided walks, wildlife conservation activities and Green Gang events for children.

These initiatives have led to an increase in the number of species of plants on the chalk downs, and particularly wild orchids such as *Ophrys apifera* (Bee Orchid), *Dactylorhiza maculata* (Spotted Orchid), *Ophrys fuciflora* (Late Spider Orchid), and butterflies like *Lysandra bellargus* (Adonis Blue) and *Hesperia comma* (Silver-spotted skipper).

Thirty-one different species of butterfly can now be seen on the Downs during the year, more than half the number of species in the UK, making the Kent Downs one of the best places in the country to observe meadow butterflies.

Ongoing ecological monitoring confirms a constantly improving trend in the biodiversity of the area. At the same time, care is taken to preserve and improve use of the site for leisure activities, with a number of new footpaths being established to create circular walks.

With all these improvements, the public is provided with information in the form of bilingual leaflets and site interpretation panels. The local community is encouraged to become involved too.

Against this backdrop of biodiversity, a giant white horse has been carved out of the chalk downs behind Folkestone. This artistic creation, visible from a great distance, does not necessarily disturb the delicate ecological balance of the site because it is far enough away from the place where the orchids grow.

10.22 Samphire Hoe

Samphire Hoe is a 30-hectare piece of land situated at the foot of the White Cliffs of Dover. It was created from



approximately 5 million cubic metres of chalk marl excavated during the construction of the Channel Tunnel.

The challenge for Samphire Hoe was to transform this conspicuous legacy of the Tunnel's construction into a place of environmental interest and make it available to the public for leisure activities such as walking, birdwatching and sea angling.

The day-to-day management of the site is the responsibility of the White Cliffs Countryside Project, assisted by a large body of volunteers from the local community.



The landscaping of the site was designed to blend in with surrounding areas as far as possible, using natural shapes, local plants and non-intrusive seating and signs. Full-colour, bilingual interpretation panels explaining the history, wildlife and plantlife of the site were also used as well as leaflets. Special attention was paid to disabled access (ramps, good quality surfaces to footpaths, etc.).

Since it was opened to the public in July 1997, Samphire Hoe has proved extremely popular with those who appreciate the peace and tranquillity of this unique coastal setting. The success of the site has been recognised with many awards.



Over 120,000 visitors take advantage of this magnificent site each year. Guided walks are organised and refreshments and toilets are available in the main building. Worksheets have been produced for school visits.

An artistic wooden structure called Samphire Tower recently opened to the public here in 2004.

The site supports a rich biodiversity, including 190 plant species (the result of natural colonisation of the 31 original species), 150 bird species, two of which are listed in the Red Data Book, 26 butterfly species, about 170 species of moth, including 5 featured in the Biodiversity Action Plan, and 13 species of dragonflies and damselflies.

An international research project to improve understanding of wave crest formation has used the sea wall as a temporary measuring station. The engineering consultancy conducting this research is the same one monitoring performance of Eurotunnel's Overtopping Hazard Warning System. This system displays a red flag warning the public not to use the sea wall if conditions are hazardous.

10.3 Development of the Sangatte – Blériot Plage leisure area

Eurotunnel, in line with its commitments, is continuing its efforts to de-industrialise the site of the "greatest engineering project of the century" (cooling plant, shaft, segment casting plant and Fond Pignon) and in an environmentally-friendly way.

At Sangatte, work has started on demolishing the concrete floor, the last remaining trace of Eurotunnel's former segment casting plant which was requisitioned by the French government for the Red Cross Centre between September 1999 and December 2001. The concrete will be crushed for reuse as aggregate on other worksites.

Eurotunnel is supporting the Mayor of Sangatte - Blériot Plage in a scheme to develop the area for leisure. This development project is one of the elements in developing the sites used for construction of the Channel Tunnel. Designed as a transition space between the area known



as 2 Caps, including Cap Blanc Nez, classified as a Grand Site National, the project covers an area of 110 hectares, 35 of which are owned by Eurotunnel, and includes a golf complex and an environmentally sensitive housing development. The environmental approach to this development is evidenced by Eurotunnel's close co-operation with an architect widely known as a naturalist, and the commissioning of

the French landscape designer already involved in projects and plans to protect and develop the Sangatte Shaft and Fond Pignon.

The proposed footprint of the golf course does not encroach on the natural environment and is surrounded by areas of regenerated land designed so that the course blends in with the landscape and its environment. The course has been designed in accordance with AGREF guidance (Association française des personnels d'entretien de terrains de golf) and the "Commitment to Green" standard to ensure that environmental principles are respected.

The housing development is a direct continuation of the existing urbanised and industrial areas and is located on the site of the old segment casting plant.



11 **CONCLUSION**

The issue of the environment has been an intrinsic part of Eurotunnel's activity from the outset. The principle behind the project as well as its operation are the embodiment of an ongoing policy of environmental responsibility.

Eurotunnel has always endeavoured to restore natural environments and create new ones to encourage the development of plants and wildlife on its sites. Despite its proximity to a number of conservation areas and Sites of Special Scientific Interest (SSSI), Eurotunnel has successfully integrated its infrastructure and transport operations into the natural surroundings.

Eurotunnel, in a voluntary process (clearly defined organisational structure, EMS, regulatory compliance, network of correspondents), is gradually improving its environmental management system and establishing frames of reference to measure the results of its efforts.

In 2004, the Health and Environment Committee continued the actions taken in the last ten years of operation and pursued the original environmental concerns. Improvements in environmental performances, notably in areas such as wastewater discharges, the reduction of -3+ ozone-depleting gases and waste treatment, have been sustained. Eurotunnel has also reinforced its policy of encouraging energy conservation and developing the use of renewable energies.

In spite of these positive results, Eurotunnel is convinced that the situation can be further improved and will be continuing its environmental protection action plan over the next few years.

Eurotunnel's actions, extending far beyond simple compliance with environmental standards, are intended not only to motivate all personnel but also to improve relations with local communities and residents.

The commitment to the environment via projects and initiatives, and the involvement of the staff, all demonstrate the desire of Eurotunnel to be an eco-friendly company.