

SOUTH CAMBRIDGESHIRE DISTRICT COUNCIL

REPORT TO: Planning Committee

9th January 2008

AUTHOR/S: Executive Director / Corporate Manager - Planning and Sustainable Communities

**1. S/1749/06/O - DUXFORD
Construction of a Carbon Fibre Precursor Plant**

**2. S/1703/06/HSC
Storage of Acrylonitrile**

Land off Ickleton Road for Hexcel Composites Ltd

Recommendation: Minded to Approve (Major Development)

Date for Determination: 14th September 2007

Notes:

This Application has been reported to the Planning Committee for determination because the recommendation is to approve a Departure from the Development Plan and objections have been received from Parish Councils and Local Residents.

Members will visit this site on 9th January 2008

Departure Application

Site and Proposal

1. The former Ciba Geigy industrial site adjoins the south-eastern edge of Duxford, and is currently occupied by two companies, Hexcel Composites Ltd and Huntsman Advanced Materials UK Ltd.
2. Hinxton and Ickleton lie 0.75km and 1.5km to the south-east and south respectively. The M11 runs approximately 1km to the west, and the Cambridge-Liverpool St railway line 0.25km to the east, with disused sidings once serving the site. The River Cam flows to the east of the site in the vicinity of the main railway line. A Transco above ground gas installation is located about 0.3km to the south, and closer to the site a public footpath links Ickleton and Hinxton Roads.
3. The outline application, received on 5th September 2006 and amended on 21st June 2007, proposes the construction of a carbon fibre precursor plant comprising 63,000m² of plant and buildings on a 10.54ha site which is partly within the existing complex but includes agricultural land to the south-east and south-west of the existing railway sidings.
4. The application is accompanied by an Environmental Statement, a Sustainability Statement and a Design and Access Statement.

5. The application site includes a number of existing buildings/plant which are to be modified/demolished/extended, and includes a small, separate area in the centre of the existing complex where two specific items of plant are proposed to be located.

Part of the application site has previously been used as a contractor's compound housing portable cabins, and the rail sidings for chemical offloading, which ceased about 10 years ago. Around the sidings are areas of concrete and tarmac hardstandings, whilst other areas are overgrown with grass and weeds. South and west of this area is agricultural land. The western boundary to Ickleton Road is screened by a planted bund and there is a younger belt of trees running parallel and about 35m inside the southern boundary. To the east is a former dumping area which has been reclaimed and planted with trees.

6. Although the application is an outline with all matters reserved apart from the access, indication of the siting and scale of the buildings and plant is given. A number of buildings, storage tanks, reactor vessels, pipework and effluent treatment facilities are proposed. Of the buildings, the Spin Line Building, which is an extension to an existing building on the site, would have the biggest footprint with an overall length of 200m and a height of 12m. A 20m high despatch building (65m x 35m) is proposed close to the centre of the existing complex and would be the second largest building. A 9m high boiler house and another grouping of plant 6m high is proposed in this central location. Just south of the sidings is the Polymerisation Building (700m²) which at 29m high is one of the two highest structures proposed, the other being the Dope Dissolving Tower attached to the Spin Line Building which is the same height. Concentrated south of the sidings are primarily storage tanks and effluent treatment tanks and plant, in the range 2.5-11m in height, surrounded by a repositioned security fence.
7. A planted bund is proposed along the southern boundary to supplement the existing tree belt.
8. About a quarter of the application site is taken up by a temporary construction compound to the west of the railway sidings, incorporating car parking, storage, portable cabins etc and a temporary vehicular access from Ickleton Road.
9. Generally, the two highest buildings at 29m will be approximately 7m higher than the tallest existing building on site but below the level of the two existing boiler house stacks.
10. It is anticipated the development will generate an additional 100 jobs at the site.
11. Summarising the additional information in the documents accompanying the application:
 - a) *Design and Access Statement*
12. Hexcel currently employ 460 on site and also operates from the USA, Spain, France, Austria and Germany. The Company's decision to expand their existing operations at Duxford is largely in response to demand from customers, primarily Airbus, for a European supply of a precursor carbon fibre, i.e. carbon fibre in ribbon form before it is formed into components. There is currently no precursor manufacturers in Europe which are qualified to supply aerospace manufacturers. Production is concentrated in the U.S.A. and Japan. Of all the European sites, Duxford was chosen because it was a proven chemical processing plant with land available for expansion primarily in the Company's ownership. It represents an efficient and sustainable activity utilising the

current expertise of employees e.g. it is the current base for Hexcel's European Research and Development Department.

13. A minimum 5ha is required for the process. The new plant will require a range of bulk chemicals when fully operational. To lessen the environmental and safety impact, the applicants would wish to have the option of either road or rail supply of chemicals or a combination of the two. All safety and environmental aspects of the development, including the storage and transportation of chemicals, will be considered and managed in complete adherence to or exceeding current legal and local requirements. The plant would operate on a continuous basis, as does the existing operation currently on site.
14. Once constructed, access to the site will be via the existing access road to the entire site off Ickleton Road. Internal roads will be constructed around the plant for maintenance purposes and to a tanker offloading area. Access to the site from the south is restricted by a level crossing and the village of Ickleton. Therefore HGVs are unlikely to access the site from that direction, but via the M11/A505 to the north. A Traffic Management Plan will be prepared at the reserved matter stage. It is anticipated that the railway sidings will be brought back into use for the import of materials and the export of products. The number of pedestrian or cycle journeys to and from the site is likely to be relatively low, but the site can be accessed safely on foot or by cycle. Disabled access to the site and buildings will be in accordance with the appropriate regulations.

b) Sustainability Statement

15. The proposed design seeks to:
 - (a) Minimise the loss of agricultural land. The layout of the plant has been designed to make best use of the land owned by Hexcel. The area of 6.3ha is significantly less than the existing Company facility in the USA which covers 11ha.
 - (b) Reduce the use of non-renewable resources. A large saving in the use of heating can be achieved by the installation of heat recovery equipment or utilising waste heat in other areas of the Duxford site. In addition the co-location of the facility with existing Company operations will reduce the amount of car journeys by staff and reduce emissions. Energy efficient machines will be installed to conserve electricity, and Hexcel will contribute financially to support the electricity suppliers in achieving their Renewables Obligation.
 - (c) Conserve Water Resources. The proposed plant is designed to greatly reduce the water requirement compared with the USA facility. 75% of the main process water flow will be reprocessed.
 - (d) Maintain and enhance habitats and species. Once construction of the plant is complete the landscaping of the southern boundary of the site will take place. The net result of the landscaping will be an increase in the number of trees on the Hexcel site, creating a larger area of native woodland. Once the woodland has matured this will enhance the local habitat for wildlife.
 - (e) Respond appropriately to the existing landscape. The proposed plant has been designed to blend in with the existing Duxford site, matching building styles and finishes with existing buildings on the site. The landscaping along the southern boundary of the site will reduce the visual impact of the plant from Hinxtton and

Ickleton. The plant layout also minimises the building facades presented to the local residents in Duxford, Hinxton and Ickleton.

- (f) Reduce emissions and development impacts. The predicted emissions from the plant have been modelled and outlined in the Environment Statement. The principal sources of emissions to the atmosphere will be four natural gas fuelled boilers with light fuel backup and two Acrylonitrile stacks. No impact on human health or the surrounding vegetation or ecosystem are predicted.
 - (g) Waste reduction and improved recycling. The USA facility has a commercial outlet for waste carbon fibres. Duxford will also seek to send similar waste to the same outlet. Other waste reduction and recycling opportunities will be examined as part of an overall waste minimisation strategy.
 - (h) Appropriate Infrastructure Development. The Precursor process is the first step in generating Carbon Fibre. In recent years the use of Carbon Fibre has been increasingly seen as an alternative to more traditional materials in the Aerospace industry. The use of Carbon fibre in aircraft reduces the weight and therefore fuel consumption, reducing emissions to the environment. Hexcel are committed to investing in the manufacture of CFP and see Duxford as the best location to site the new plant.
 - (i) Improve the local economy. The Duxford site has been in composite manufacturing for over 50 years and is a significant employer in the local area. The proposed CFP plant would bring a large investment to Duxford, securing the future of the site for many years and helping to sustain the local and regional economy. The benefits of this development will be to secure a number of jobs at various skill levels and also a large knock on effect to service companies. This development also fits with government targets to support the aerospace industry.
16. A biodiversity statement is included within the Sustainability Report, based on the County Council's criteria:
- (a) Survey - an Environmental Impact Assessment has been undertaken for the proposed development, including comprehensive landscape and ecological survey work.
 - (b) Protect - temporary disturbance will be caused to wildlife, including some Red List and Priority species. However, the Environment Statement concludes that given the relatively small area that will be affected and the availability of similar habitat in the surrounding area, the impact of the development proposals on these species will be insignificant.
 - (c) Mitigate - the following measures are proposed:
 - 1. Bunding and woodland planting will be undertaken, notably on the southern boundary.
 - 2. Areas of disturbed earth will be covered with shingle, returned to grass or planted with replacement trees.
 - 3. Construction activity will be confined to the minimum areas required. Temporary work areas, including site access, will be situated on areas of hardstanding or areas of low nature conservation value.

4. Best site management practices will be adopted to minimise the risk of impacts to habitat and species.
 5. Trees to be retained will be protected to the requirements of BS5837.
 6. Topsoil and subsoil will be stripped and stored separately during construction, and reinstated as soon as possible to maintain soil structure.
 7. Wherever possible, tree removal will take place outside the bird breeding season. When this is not possible, all habitats will be checked for nesting birds before removal. If any are found, mitigation measures will be implemented as agreed with English Nature.
- (d) Enhance - existing habitats of nature conservation interest will be retained and new habitats of value created such as a grassland buffer and introducing scrub species. A detailed landscape scheme will be submitted.
 - (e) Compensate - where trees are to be lost, replacement planting is proposed to ensure no net loss of trees. There will be an overall increase in the area of woodland.
 - (f) Monitoring and Management - Both the landscaped bund and the field to be used during the construction period will be left to regenerate and colonise naturally post completion. Specific monitoring and management of these areas will not be required.

17. *Environmental Statement*

The statement reports the findings of the Environmental Impact Assessment undertaken for the proposed development. It describes in detail the environmental impacts arising from the construction and operation of the scheme and measures that are intended to mitigate any potential impacts. A Flood Risk Assessment is included.

18. The following extracts are particularly relevant:

- (a) Carbon Fibre Precursor is manufactured by the polymerisation of Acrylonitrile to form polyacrylonitrile (PAN). The PAN is then spun into a fibrous form with up to 12,000 fibres in one bundle.
- (b) The PAN process utilises water at all stages and this will be extracted from the existing on-site boreholes, keeping within the maximum capacity allowed. Initially contaminated waste water will feed directly into the site effluent treatment plant operated by Huntsman Ltd. Subsequently, a separate PAN plant biological effluent treatment facility will be constructed by Hexcel.
- (c) Lighting to the development will be designed to avoid glare and light spillage, to the sky and adjacent areas, particularly residential.
- (d) It is proposed the construction of the plant will last 33 months. At some stages of the project it may be necessary to work outside normal working hours e.g. Sundays. Construction operations will be structured, where practicable, to ensure any noise generating activities are avoided.
- (e) The Flood Risk Assessment concludes that providing the operating procedures for the existing attenuation pond at the effluent treatment works are amended,

to enable the additional run-off to be temporarily stored, there will be no increase in the peak rates of discharge to the River Cam.

(f) The full range of likely environment impacts has been examined and mitigation measures suggested. This includes both the construction and operational phases. The following residual impacts were considered significant.

1. Visual amenity - Moderate/substantial residual adverse impacts will occur to receptors (residents) in Hinxton. Mitigation includes the tall buildings being placed as far from the village as the site permits, the orientation of taller buildings/structures will be designed so that the extent of the façade presented to the village is minimised, and landscape bunding on the southern and south eastern edges of the site will help in screening views of lower components of the proposed plant.
2. Traffic and Transport - significant short term adverse residual impacts are predicted to the road network from the peak construction labour vehicle movements for some 5 months during 0700-0800 hours. However, as the baseline traffic flows on Ickleton Road are low, any incremental increase might then be termed as significant. 204 daily return trips by construction workers are predicted, concentrated at the beginning and end of the working day.

NB: Historically, when the entire Duxford site was in full production it has generated significantly more traffic movements than currently experienced without creating adverse impacts. The predicted traffic generation for this development will increase traffic movements by 8% above the current baseline within the 1400hr shift changeover period.

It is also estimated that during the 5 month peak construction period there will be a maximum of 27 HGV return trips per day (approx. 7 HGVs per hour). Once operating this would drop to approximately 6 return HGV trips a day, excluding the possibility of the reuse of the rail sidings. Although about 100 new jobs would be created, only 45 or so would be on at any one time as a shift system would operate. About 30 traffic movements are predicted (15 cars in, 15 out), all shift changes occurring outside peak traffic flows. 2 visitors a day on average are anticipated and 1 maintenance vehicle.

3. Archaeological evaluation has taken place on site and the results have proved negative.

19. The hazardous substances consent application, received on 25th August 2006 and amended on 21st June 2007 proposes the storage of 400 tonnes of the chemical Acrylonitrile, used in the production of Carbon Fibre Precursor material, in 5 bunded tanks to the south of the existing railway sidings, and identifies the adjacent Polymerisation Building where the chemical will be processed.

Planning History

20. The site adjoins and forms part of the former Ciba-Geigy Industrial Site which has been the subject of numerous planning applications over the years for buildings/plant and the storage of hazardous chemicals.

Planning Policy

Cambridgeshire and Peterborough Structure Plan 2003

The following policies are relevant:

21. **Policy P1/3** - Sustainable Design in Built Development - states a high standard of design and sustainability for all new development will be required, making efficient use of energy and resources.
22. **Policy P2/5** - Distribution, Warehousing and Manufacturing - states that manufacturing activities which generate large volumes of freight movement will only be located on sites with good access to rail freight facilities and motorways, trunk or other primary routes.

South Cambridgeshire Local Development Framework 2007: Development Control Policies

The following policies are relevant:

23. **Policy DP/1** - Sustainable Development - states development will only be permitted where it is demonstrated that it is consistent with the principles of sustainable development. It should, inter alia:
 - a) Minimise the need to travel and reduce car dependency;
 - b) Make efficient and effective use of land by giving priority to the use of brownfield sites;
 - c) Where practicable, use sustainable building methods, locally sourced materials, including recycled materials, and include a Travel Plan to address the travel needs of labour during construction;
 - d) Where practicable, minimise use of energy and resources;
 - e) Where practicable, maximise the use of renewable energy sources;
 - f) Incorporate water conservation measures;
 - g) Minimise flood risk;
 - h) Mitigate against the impacts of climate change on development through the location, form and design of buildings;
 - i) Ensure no unacceptable adverse impact on land, air and water;
 - j) Conserve, and wherever possible, enhance biodiversity of both wildlife and the natural environment;
 - k) Conserve, and wherever possible, enhance local landscape character.
24. **Policy DP/2** - Design of New Development - states all new development must be of high quality design and, as appropriate to the scale and nature of the development, should, inter alia:
 - a) Preserve or enhance the character of the local area;

- b) Conserve or enhance important environmental assets of the site;
- c) Be compatible with its location and appropriate in terms of scale, mass, form, siting, design, proportion, materials, texture and colour in relation to the surrounding area;
- d) Include high quality landscaping compatible with the scale and character of the development and its surrounding.

25. **Policy DP/3** - Development Criteria - states:

- a) All development should provide, as appropriate to the nature, scale and economic viability, inter alia:
 - 1) Appropriate access from the highway network that does not compromise safety, enhanced public and community transport and cycling and pedestrian infrastructure;
 - 2) Car parking, with provision kept to a minimum;
 - 3) Safe and secure cycle parking.
- b) Planning permission will not be granted where the proposed development would have an unacceptable adverse impact, inter alia:
 - 1) On residential amenity;
 - 2) From traffic generated;
 - 3) On village character;
 - 4) On the countryside and landscape character;
 - 5) From undue environmental disturbance such as noise, lighting, vibration, odour, noxious emissions or dust;
 - 6) On ecological, wildlife and archaeological interests;
 - 7) On flooding and flood risk;
 - 8) On the best and most versatile agricultural land;
 - 9) On the quality of ground or surface water.

26. **Policy DP/6** - Construction Methods - states:

- a) When practicable, development which by its nature or extent is likely to have some adverse impact upon the local environment and amenity during construction and/or is likely to generate construction waste should, inter alia:
 - 1) Recycle construction waste;
 - 2) Prepare a 'Resource Re-use and Recycling Scheme to cover all waste arising during construction;

- 3) Be bound by a “Considerate Contractors Scheme”, including restrictions on hours of noisy operations.
 - 4) Where appropriate accommodation construction spoil within the development, taking account of the landscape character and avoiding the creation of features alien to the topography;
 - 5) Maximise the re-use and recycling of any suitable raw materials currently available on sites during construction.
- b) Storage compounds, plant or machinery must be located, designed and used to avoid noise, smell, dust, visual or other adverse impact on existing residents.
27. **Policy ET/3** - Development in Established Employment Areas in the Countryside - state, inter alia:
- a) In defined Established Employment Areas in the Countryside redevelopment of existing buildings, and appropriate development for employment use may be permitted.
 - b) “Land at Hinxtan Road, South of Duxford” is identified as an Established Employment Area, defined on the Proposals Map.
 - c) Permission will be refused where there would be a negative impact on surrounding countryside, or landscape character area.
28. **Policy ET/5** - Development for the Expansion of Firms states, inter alia:
- a) Development for the expansion of firms will be permitted that involves existing firms for their own occupation and use.
 - b) Expansion will be permitted of previously developed sites next to, or very close to, village frameworks.
 - c) Within Established Employment Areas in the Countryside listed in Policy ET/3.
 - d) Expansion will not be permitted where it consolidates a non-conforming use (i.e. a use which does not conform to the general provisions of the development plan for the area in which it is located, and may have an adverse impact on an area’s principal use) or causes problems with traffic, noise, pollution, or other damage to the environment. It would not be permitted if it would conflict with other policies of the Plan.
29. **Policy SF/6** - Public Art and New Development - states in determining planning applications the District Council will encourage the provision or commissioning of publicly accessible art, craft and design works. The Policy applies to manufacturing development of 1,000m² or more. Contributions and commuted maintenance sums for up to 10 years will be required, to include the cost of decommissioning where appropriate.
30. **Policy NE/1** - Energy Efficiency - states development will be required to demonstrate that it would achieve a high degree of measures to increase energy efficiency of new buildings through, for example, location, layout, orientation, aspect and external design. A 10% reduction in CO₂ emissions is encouraged compared to the minimum Building Regulation requirement.

31. **Policy NE/3** - Renewable Energy Technologies in New Development - states all development proposals greater than 1000m² will include technology for renewable energy to provide at least 10% of their predicted energy requirements.
32. **Policy NE/4** - Landscape Character Areas - states development will only be permitted where it respects and retains or enhances the local character and distinctiveness of the individual Landscape Character Area in which it is located.
33. **Policy NE/6** - Biodiversity - states, inter alia, new development should aim to maintain, enhance, restore or add to biodiversity. Where appropriate, measures may include creating, enhancing and managing wildlife habitats. Previously developed land will not be considered to be devoid of biodiversity. The re-use of such sites must be undertaken carefully with regard to existing features of biodiversity interest.
34. **Policy NE/7** - Sites of Biodiversity or Geological Importance - states planning permission will not be given for proposals that may have an unacceptable adverse impact, either directly or indirectly, on such sites.
35. **Policy NE/12** - Water Conservation - states development must incorporate all practicable water conservation measures. All development proposals greater than 1000m² will be required to submit a Water Conservation Strategy prior to development commencing.
36. **Policy NE/13** - Hazardous Installations - states in considering proposals for hazardous substances consent account will be taken of the amount, type and location of hazardous substances present, and the need for special precautions to protect future users of the site.
37. **Policy NE/14** - Lighting Proposals - states development proposals which include external lighting should ensure that the proposed lighting scheme is the minimum required for safety and security and there is no light spillage above the horizontal to avoid adverse impact on the countryside.

Consultation (applications/amended plans)

1. S/1749/06/O - CARBON FIBRE PRECURSOR PLANT

38. **Duxford Parish Council** recommends refusal, commenting that although the basic proposal to expand the site was supported and the strategic importance of the site was recognised, both in terms of the long-term development of the Company and the U.K. economy, the Council have grave concerns about the traffic impact during the 3 year construction phase of the project. The addition of an estimated 204 cars during the morning and evening peak hours will considerably increase the risk of an accident on either Hunts Road or Ickleton Road. Furthermore, the village primary school is at the junction of Hunts Road and St John's Street where there is always congestion at drop off and pick up times.

In addition, work has just started on the affordable housing development on Hunts Road, which will add extra traffic and another junction onto Hunts Road.

The Parish Council recognises the importance of this project and therefore expects that some external funding should be available to support changes to traffic infrastructure, the East of England Development Agency, the Office of the Deputy Prime Minister and even the European Union.

A meeting was requested with the District Council and the Applicants to discuss the matter further and this took place on the 13th December 2007. A verbal report will be made.

39. **Hinxton Parish Council** objects: The following comments relate to the original application:

“After careful consideration and open consultation with Hinxton village, the Parish Council recommends that this proposal is rejected.

The substantial and negative impact of the development on the village and its residents is unacceptable in this rural environment and Conservation Area. The potential hazard from use and storage of extremely toxic chemicals adds another dimension to our concerns.

We are particularly concerned that:

- (a) The proposal contravenes the Local Development Plan 2004, and also the proposed Local Development Framework.
- (b) This is an inappropriate location of a major expansion and departure from current chemical operation which will reclassify the plant as “high risk” - too close to many homes (300 metres in Duxford, remainder of Duxford village, Hinxton and Ickleton as nearest neighbours).
- (c) Major escalation of HS&E risk from toxic chemicals not currently used on site.
- (d) Major impact on Hinxton in visual amenity.
- (e) Potentially unrealistic estimate of traffic impact during construction and subsequent operation of the site.
- (f) Construction noise.
- (g) Threat to wildlife and rural ambience.
- (h) No benefit fed back into communities - workforce expanded but minimal employment opportunities for local residents.
- (i) No attempt to engage our community (Hinxton) in consultation prior to submission of the planning application.
- (j) Ongoing light pollution.

Request for full consultation with all relevant experts

The potential impact of this proposal is such that the Parish Council specifically ask that all the relevant departments are consulted (included HS&E, planning local and regional), highways, water supply and water table/flood risk, sewerage and effluent treatment, conservation (wildlife and archaeology, trees - reorder) and that before the application should go before the Planning Committee a site visit is made by them and all other relevant parties which should include visits to Hinxton (including aspect from A1307) that will be substantially impacted by the development.

Concern

The Parish Council would like to record its concern regarding lack of consultation and information on this issue which was only formally notified to the village with the arrival of the plans at the end of September ('06).

The planning documentation indicates that Duxford village (PC) was amongst the parties consulted. Given that the application specifically identifies Hinxtton as suffering a major visual impact it is of particular concern that no formal consultation was undertaken with Hinxtton.

Hinxtton Parish Council Village Consultation

Being aware of the potential impact of this proposal on the village and the concerns of many villagers, the Parish Council held an Extraordinary Parish Council Meeting on Monday 6th November 2006 specifically to consult with the residents of Hinxtton whom they represent. The response was resounding: approximately 40 residents (village has ~ 130 households) were present along with Patrick Winterterlich and Phil Laker representing the applicant, Hexcel Composites Ltd; all 7 PC members plus the Parish Clerk; the District and County Councillors and Carolyn Goehler representing the Cambridge Preservation Society. CPRE sent their apologies but will make a separate submission. The Woodland Trust were unaware of the application and will inspect the site in the next few days, making a separate response to the proposal to remove their planting of 700+ established trees on the then Ciba-Geigy site.

Hexcel management outlined the history and rationale for the planning application, answering questions from those present. The meeting was advertised in the Hinxtton Newsletter which is delivered to all households in the village and on the village notice boards.

The overwhelming input from the attendees was that this proposed development is inappropriate in terms of its major and unacceptable impact on Hinxtton, the location of the site, size and height of the development, contravention of many of the planning policies of SCAMBS District Council, lack of sympathy with the surrounding rural setting and the escalation of risk from chemical pollution.

No adequate evidence of benefit to the village **in any form** has been provided to justify approval of this development. It is only detrimental.

Reasons for rejection of the proposal:

1. Local Planning Policy

We have identified the following major areas where we consider that the plans do not conform with Local Planning Policy:

(b) Change of land use

The proposed development is sited on land currently designated for "non-employment" use in both the Local Development Plan 2004 and the proposed Local Development Framework. If this proposed new development is allowed, it will set a precedent for further industrial applications in this rural area.

(c) Local environment

We consider that this application does not conform to Policy P7/4 which states that a development should be sympathetic to the local environment and alludes to the sense of place, identity and diversity of the distinct landscape character areas.

The proposed plant will include 2 buildings of 29 metres height, one of 20 metres, 4 chimneys emitting steam plus 7 large chemical storage tanks.

(d) Impact on the river valley

SCAMBS Local Plan Policy EN2: the council will not permit development which has an adverse effect upon the wildlife, landscape and countryside character of the river valleys.

The visual impact, prolonged period of construction and increased risk of pollution would each adversely affect this part of the River Cam.

(e) Landscape character area

Policy EN3 states that new developments should be appropriate to the "landscape character area".

Given its scale, this proposed development will not blend into the landscape and will totally dominate it.

(f) Protected species

Policy EN13 states that the Council will not grant planning permission for development that could adversely affect, **either directly or indirectly**, the habitats of plant and animal species that are protected by law.

Several Red Data Book species will be affected by this development including otter, brown hare and skylark .

2. Risks of toxic chemicals

Whilst we appreciate that Hexcel will make every effort to conform to all necessary safety procedures and containment, the Parish Council has a very serious concern (reinforced by many residents at the open meeting) about the toxic nature of the chemicals to be introduced onto the site and the substantial increase in the quantity of such materials stored on site.

All of the following pose risks of leakage and spillage with potentially devastating consequence for the local population and environment:

1. Storage
2. Handling
3. Transport
4. Transfer
5. Human error

We should particularly like to draw the attention of the Planning Department and Committee to the following points:

- (a) Hexcel indicated that the amount of toxic chemicals stored on site will increase by 8-fold from 50 tonnes to 400 tonnes. This will increase the classification to “high risk” that will entail implementation of additional safety and warning systems.
- (b) The new process depends on the use of Acrylonitrile, otherwise known as vinyl cyanide, which is extremely toxic, carcinogenic and mutagenic (see www.inchem.org/documents/hsg/hsg001.htm). Our understanding is that approximately 8 tonnes of the material will be present on site at any one time. It is volatile and requires the presence of a stabiliser. Our research so far indicates that over the last 4 years there have been at least 4 explosions involving vinyl cyanide.

Scoping checklist Q7.1 of the environmental statement acknowledges that there is a potentially significant effect resulting from handling, storage, use or spillage of hazardous or toxic materials.

It is our opinion it is totally inappropriate to locate a facility using this chemical in close proximity to residential rural communities.

3. Transportation

(a) Road Tankerage

Speaking to the HS & E manager of Hexcel he volunteered the information that the company providing the chemical prefers road tankers rather than rail - since rail goes through towns and cities rather than bypassing them by motorway. It should be noted that in the USA this is classified as a “cargo of particular hazard” - all bulk movements require a special permit.

(b) Planning Policy Guidance number 13/transport is to reduce the need to travel especially by car.

Hexcel state that they anticipate the majority of employees will commute to site in their own vehicles, thus further increasing the congestion and pollution.

4. Additional points

- (a) Potentially significant effects caused by run-off water (storms etc.) as all areas of this site where there is process equipment will be paved.
- (b) Sewage sludge and other sludges from effluent treatment will be classed as hazardous land fill (scoping 4.6).
- (c) 7.3 Air emissions - by deposition of pollutants emitted to air, onto the land, or into water.
Yes - potentially significant effect.
- (d) Q8: Risk of accidents during construction or operation of the project which could affect human health or the environment? 8.1 From explosions spillages fires etc, from storage, handling or use of production of hazardous or toxic substances?
Yes - potentially significant effect.

- (e) 8.4 effect of natural disasters causing environmental damage (e.g. floods, earthquakes, landslip etc.)
Yes part of this site lies within the designated flood plain - potentially significant effect.

5. Final comments

In their environmental statement Hexcel admit that moderate to substantial residual adverse impact will occur to “receptors” (residents) in Hinxtton (Table 10.1). Residents and visitors alike should be allowed to enjoy the quiet amenities of the pathways and footpaths around their village. This development, should it be permitted, will severely curtail the ambience and character by its sheer size and dominance over the countryside.

Residents should also have a right to enjoy the fresh open air without fear of pollution and fear from suffering long-term effects of exposure to carcinogenic and teratogenic toxic chemicals.”

The following comments relate to the amended application. The Parish Council remains unanimously opposed:

“We would like to point out that the CFP plant is a completely new application for Hexcel in Duxford, and is proposed to be built on land designated for “non employment use”, and adjacent to a rural landscape.

In particular:

- a) Policy P1/2 of the Cambridgeshire and Peterborough Structure Plan states that development will be restricted in the countryside unless proposals can be demonstrated to be essential in a particular rural location.

Other policies set out to protect the countryside are:

- a) Policy EN2 which states that the Council will not permit development which will adversely affect the wildlife, landscape and countryside character of the river valleys.
- b) Policy P7/4 which states that a development should be sympathetic to the local environment.
- c) Policy EN3 states that new developments should be appropriate to the landscape character area.

THE PROPOSAL TO CONSTRUCT A CFP PLANT ON THIS SITE DEFIES ALL THESE POLICIES.

The Government and other bodies are spending a huge amount of time, effort and money to cut carbon emissions. Firstly, the construction of such a large plant (should it go ahead) over several years will create an enormous amount of CO₂ with the use of tens of thousand tons of concrete, heavy plant machinery and vehicles etc. Once constructed, the transportation of Acrylonitrile by tanker from the NE of the country to Duxford (along the A14 which in itself is a hazard) will add greatly to Hexcel’s “carbon footprint”, not to mention all the ancillary vehicle movements, plus the transportation

of the finished product, (presumably to France for the Airbus construction), and the actual day to day running of such an 'energy-consuming' plant.

The construction of such a huge application, including two buildings of 29m (95ft) and a quantity of large storage tanks in this area will totally dominate the surrounding countryside, and no amount of bunding or landscaping will disguise this fact.

We already suffer greatly from light pollution from Hexcel, who have made absolutely no effort to incorporate light diffusers on their present site - including using enormous 'football field' lights on their waste water storage site which is approximately 550 metres from Hinxton, and the proposed new site will be even more visible from this village. We are also concerned with noise pollution, as this application will be running 24 hours a day, seven days a week, with initial construction noise lasting for approximately 4 to 5 years.

There are but few manufacturing sites in this part of South Cambridgeshire, and NONE reach these enormous proportions. The effect on surrounding rural communities and Hinxton in particular, will be totally unacceptable".

40. **Ickleton Parish Council** approves, subject to:

- (a) *Access by Road.* The Environmental Statement (7.2.2) states "access to the site from the south will be restricted by a level crossing and Ickleton Village. As such, HGVs and abnormal loads will not normally access the site from the south.....smaller goods vehicles will, however, still be able to access the site from the south.....it has been assumed that all (construction and operational personnel) vehicles, both during construction and operation will access the site from the north" We are concerned that this statement is insufficiently robust in order to ensure that HGVs in particular do not approach the site through Ickleton.
- (b) *Access by Rail.* We strongly support the proposal that the operation of the branch line will resume and where possible be used for the import of materials and the export of products. We feel their statement should be more robust.
- (c) *Trees.* It is proposed to construct a bund along the southern boundary of the proposed development and to plant a strip of woodland to the south of the site. We would point out that the land is very poor, and therefore the trees planted will require intensive maintenance if they are to avoid the effects of the drought. Furthermore, it is not clear from the application how much planting there will be. It is important that a large number of trees are planted.
- (d) *Lighting.* We would emphasize the need to ensure that new lighting is reduced to the minimum required for safe operation of the works, and to keep light pollution to a minimum.
- (e) *Imperial War Museum.* We are concerned to ensure that as aircraft from Duxford cannot overfly the site, there will be no impact on the fighter circuit. Little or no reference is made in the application to the proximity of IWM to the site.

The amended plans were approved, although concerns were expressed about increased traffic through the village, the impact of traffic on Duxford Primary School and it was also queried whether the health and Safety Executive had assessed the proximity of the gas station to the application site. The concerns raised by Hinxton Parish Council regarding the chemical Acrylonitrile were noted.

41. **Sawston Parish Council** objects:

- a) The dangerous nature of the processes involved.
- b) The closeness of housing and a primary school.
- c) The problems of transporting this chemical by road on the notorious A14 and much smaller village roads.
- d) The risk of explosion and the consequent 'fallout' over many surrounding villages.

42. **Great Chesterford Parish Council** expresses concern:

"Great Chesterford is about 3 miles from the site of the proposed plant.

The Parish Council discussed the available information at a recent meeting and considers that it has a direct interest in the environmental impact of this proposal. We are concerned for the impact of the storage on this site of large quantities of a toxic chemical with lethal properties and for the impact of transporting this substance through this community.

It is unclear whether any consideration has been given to:

1. The siting and isolation of individual storage containers, so that the risk of any repetition of the Buncefield accident is virtually eliminated;
2. The likely behaviour and dispersal of the cloud of toxic gases released by accidental spillage or by a catastrophic explosion. We note that the half-life of these gases in air is about 10 hours.

We seek your reassurance that final decisions regarding this planning application will not be taken until full account has been taken of:

1. Public comment on Hexcel's proposals since it is subject to the Public Participation Directive and
2. Comments from neighbouring parishes once they have had an opportunity to read and comment upon the report on this application which we understand will be provided by the Health and Safety Executive towards the end of 2007. We assume that the HSE Safety Assessment Guide or something similar will have been followed.

An independent expert opinion on the transport and storage of Acrylonitrile should be sought"

43. **Little Chesterford Parish Council** objects:

"I am writing on behalf of Little Chesterford Parish Council, which although in Uttlesford, is part of the Cambridge Sub-Region in the revised version of the

'Regional Spatial Strategy for the East of England', and is a village in local proximity to the proposed development quoted above.

Since we are in a different district and county we have only just been made aware of this planning application, which we believe will have a potential impact on our village.

The reason for our objections is that the proposed developments are contrary to regional, county and district planning policy.

Regional Policy - 'Regional Spatial Strategy for the East of England'

In this emerging 'East of England Plan' the development site in Duxford is within the Cambridge sub-region for which the following policies apply:

Policy CSR4 *"Employment land in and close to Cambridge will be reserved for development that can demonstrate a clear need to be located in the area to serve local requirement".*

The development proposed is not wholly contained within the present boundaries of the existing site. The land on which part of the development is to take place on is not designated as employment land, but even if it is, this policy, and the basis of policy for the Cambridge sub-region, is clear in that only essential development should occur outside specified locations, of which this is not one. There is no local requirement for a carbon-fibre precursor factory in the Cambridge area, it would be better sited nearer to the source of the Acrylonitrile production to reduce transport of this dangerous material.

This policy strand is also included in the Peterborough and Cambridgeshire Country Structure Plan 2003.

Policy P9/7 *"Employment land in and close to Cambridge will be reserved for development which can demonstrate a clear need to be located in the area to the continuing success of the sub-region as a centre of high-technology and research. Development proposals must demonstrate that they fall into one or more of the following categories:*

- a) high-technology*
- b) small scale industrial*
- c) office or essential service for the Cambridge regions*

Clearly the proposed development is a large scale industrial manufacturing operation that has no requirement to be located in the Cambridge sub-region.

Policy P7/4 *"Development must relate sensitively to the local environment and contribute to the sense of place, identity and diversity of the distinct landscape character".*

The size of the development proposed, especially its height, would be visible for many miles around and would appear to contravene this policy.

Policy P/2 *'No new development will be permitted within, or which is likely to adversely affect...functional floodplains or other areas where adequate flood protection cannot be given and/or there is a significant risk of increasing flood risk elsewhere'.*

All of the proposed development is in a river valley and part of the site is classified by the Environment Agency as of risk of flooding. Any further building on the site would increase the surface runoff and increase the risk of flooding elsewhere, particularly through the village.

The policy also states *'Development will be restricted:*

- *in the countryside, unless the proposals can be demonstrated to be essential in a particular rural location,*
- *where there is an unacceptable risk to the quality of ground or surface water.*

The proposed development is partially sited on undeveloped rural land and in no way can it be argued that it is essential in a rural location such as Duxford. There is also a very real risk of pollution from the site, especially from the Acrylonitrile which is highly toxic. The aquifer in the underlying chalk bedrock could be polluted.

Policy P7/8 *'New developments will be located and designed to minimize and where possible avoid air, land and water pollution'.*

Since the planning application is substantially for a new development on land which has previously been undeveloped, it would seem that the choice of site is extremely poor for such a manufacturing facility. In order to minimize water pollution it would need to be located away from a floodplain, similarly air pollution is worse in valleys where dispersal of plumes from chimneys can be hampered by poor windspeeds and temperature inversion.

Policy P1/3 is also important since development should *'minimize need for travel'* and have *'good access by public transport'*. The proposed development is in a rural location where the limited public transport system is grossly insufficient for a factory working a shift pattern. Therefore employees are likely to travel to work by car which will cause more traffic and pollution especially in the local villages. This is contrary to efforts to make new developments sustainable.

South Cambridgeshire District Council Adopted Local Plan 2004

The proposed development sits partly on an area outside the Special Policy Area for the Duxford Chemical plant site. As such, it is in an 'Area of Restraint' in South Cambridgeshire. Policies in the Local Plan mirror those in the County and Regional Plans with *'any proposals for development will need to accord with the policies of employment restraint within the Cambridge area'* (para. 24.18), and Policy 26 citing management of development *"...discriminating in favour of uses that have an essential need for a Cambridge location"*.

Paragraph 5.39 states that *"Whilst the expansion of existing firms will be generally acceptable in principle, it will also be important to consider the local impact of development. Development will not be permitted where it would consolidate a non-conforming use or cause problems with traffic, noise, pollution or other damage to the environment"*. Thus expansion by Hexcel, even on the pre-existing site at Duxford, should not be permitted due to the extra noise, pollution and traffic as well as it not being a conforming use.

In paragraph 5.40 where an 'existing' firm is located within the village framework and proposed extension would require development beyond this boundary, the District Council will consider the merits of each proposal having regard to all other policies in the Local Plan, including the scale of the proposal, the impact on the landscape,

together with policy constraints affecting the land (e.g. Green Belt/Landscape Character Areas), and more detailed matters such as access, siting and materials.

Paragraph 24.18 of the Local Plan says that *'Ciba Polymers/Hexcel Corporation represents a major employment site south of Duxford village. The existing scale is beyond the employment provision that would normally be anticipated in a Group Settlement. However, any proposals for development will need to accord with the policies of employment restraint within the Cambridge Area'*.

This proposed development is not in accord with the policies of employment restraint.

Thus Regional, County and Local Plans all contain policies restricting development around Cambridge, none of which would allow the building of a carbon fibre precursor plant in this locality, especially on land that has not been designated for industrial use.

Emerging Local Development Framework

The emerging Local Development Framework also details restraints on development in the Cambridge area which should continue to restrict industrial development, and would certainly not allow manufacturing plants such as in the application to be built. Even though the applicants are already an established employer on a site detailed in Policy ET/4 it is interesting to note the objections to this policy by Hexcel during the consultation stage of this plan, in that they requested more land to be included within their Established Employment Area (Representation 13535). The Council's initial response to this representation would seem to indicate that the present application is contrary to this Planning Policy.

In summary, the proposed applications are contrary to Regional, County and Local planning policies and we urge you to refuse them".

44. **The Environment Agency** has no objection in principle to the development.

"Pollution Prevention and Control Regulations:

Hexcel Composites are regulated under the Pollution Prevention and Control Regulations. The company will need to submit an application for a substantial variation to their PPC permit. This will incorporate the process into their PPC permit.

Pre-application discussions will take place regarding requirements for this application. In addition to this the site will fall under the COMAH regulations as a top tier site due to the quantities of Acrylonitrile on site. A safety report will have to be produced once Hexcel has notified as top tier encompassing all aspects of the COMAH regulations. As above discussions will take place with the EA and HSE prior to the process equipment being installed to ensure all requirements under COMAH are met.

Development Control (floodrisk and surface water drainage):

The flood risk assessment Ref. 'Project Hook' dated May 2006 is acceptable, in principle.

The FRA satisfactorily demonstrates that the site is within flood zone 1 (Little to no risk) as designated within PPG25 and is therefore outside of the floodplain. The applicant should be aware however, that the proposed finish floor level is below the minimum requirement of 600mm above flood level. We note that the site will be

additionally bunded for potential spillage, but the buildings may, in extreme circumstances be at risk of flooding.

Given the scale of the proposal, the FRA satisfactorily demonstrates the method of surface water disposal. We therefore do not recommend any conditions, providing the works are undertaken in line with the FRA. The applicant should be reminded that they should comply with their consent to discharge and any rate limitations within it.

Under the terms of the Water Resources Act 1991 and the Land Drainage Byelaws, the prior written consent of the Agency is required for any proposed works or structures either affecting or within 9 metres of the River Cam. Any culverting or works affecting the flow of a watercourse requires the prior written Consent of the Environment Agency under the terms of the Land Drainage Act 1991/Water Resources Act 1991. The Environment Agency seeks to avoid culverting, and its Consent for such works will not normally be granted except as a means of access. Please note that formal Consent is required irrespective of any Town and Country Planning Act approvals/permissions. Consent is not implied by these comments.

Fisheries, Recreation and Biology:

7.3

The Environmental Statement report on the survey carried out in February 2006 states that no habitats or species of interest were noted in the gravel or railway areas. These areas should be surveyed in the summer when flowering plants and insects are likely to be present. The survey should include protected species listed under the Wildlife & Countryside Act 1981 (as amended). The same applies to the surrounding arable land, hedges and the woodland, which should also be surveyed again in the summer. The woodland strips should be surveyed for bat foraging and roosting areas and for bird nesting sites.

8.3.1

Loss of arable land and woodland plantation is a part of the proposals. The woodland strip should be retained where possible; no reasons for its removal are given.

Mitigation

Government has recently given the planning system a 'significant role' in its strategy to maintain, enhance, restore and add to natural habitats in PPS9, PPS1, and the UK Biodiversity Action Plan. Further biodiversity enhancements for a site of this size would be expected.

More detail on the landscape planting is needed before it can be assessed if it will mitigate for the loss of the land and associated habitats. The provision of nest boxes suitable for a variety of bird species should be included on the site. Provision of habitat and improvement of existing habitat should contribute to local Biodiversity. Action Plans for species and habitats and provide habitat for a range of species. The applicant should refer to the 'Biodiversity checklist for Land Use Planners in Cambridgeshire & Peterborough' for guidance regarding habitat creation and enhancement.

9.2.4

Low landscape bunds are mentioned but no detail is given on what material these will be made from or where it will be sourced.

Tree and shrub planting on the bunds may not be successful due to lack of water on raised bunds. Careful selection of suitable plants will be required”.

45. **Anglian Water** has no comment to make as the waste water will go to a private treatment plant and then discharge into the river.

46. **The Health and Safety Executive** comments:

“The Health and Safety Executive (HSE) is a statutory consultee for certain developments within the Consultation Distance (CD) of major hazard installations, complexes and pipelines. This consultation, which is for such a development and also within at least one CD, has been considered using the details provided by you and HSE’s assessment methodology. Only the installations/complexes and pipelines you advised us of with the consultation have been considered. Consequently, **HSE does not advise, on safety grounds, against the granting of planning permission in this case.**”

47. **The Campaign to Protect Rural England (Cambridgeshire)** objects:

- a) Buildings of up to 29 metres high will have a serious impact on the rural landscape of the Cam river valley by detracting from its rural character and increasing urbanisation. This would be contrary to Local Plan Policy EN2.
- b) The development will impinge on the wildlife habitat - a habitat important for listed rare species such as otters, hares and skylarks. This would be contrary to Local Plan Policy EN13.
- c) We are concerned about using rural roads and village streets to transport large quantities of industrial chemicals. The increased number of vehicle movements will impact on the quality of life for local residents. If the development is to be permitted, we would like to see that it be conditional on greater use being made of the railway sidings.
- d) We query the photomontage of the proposed landscape. We are concerned that Hexcel has used landscaping of trees that would need up to 30 years to mature. If that is the case, local residents would have to endure the view for some decades before the indicated landscaping scheme came to full maturity.
- e) Could your Council assure us that Hexcel has followed the accepted guidelines laid down by the Landscape Institute for demonstrating landscape impact?”

48. **Natural England** has no objection subject to a condition requiring an Ecological Management Plan, which will include a watching brief for protected species and nesting birds.

49. **National Grid** states that although it has an installation and pipelines in the vicinity, their safety and integrity should not be affected by the proposal.

50. **The Department of Trade and Industry** comments:

- “1. I am aware from this Department’s business relationship with Hexcel Composites Ltd, a key contributor to the UK economy, that you are in the process of considering a planning application from Hexcel to build a carbon fibre precursor plant at their existing site at Duxford. I am writing on behalf of the Secretary of State for Trade and Industry to made representations

concerning economic considerations that we consider should be taken into account by your Council when deciding this application.

2. As part of your Council's consideration of this application you will no doubt be taking into account the value to the local economy of the additional jobs that will be created as a result of the proposed development. You may also find it helpful to be aware of the national perspective on the investment programme currently being planned by Hexcel in the UK and its importance to the future of the composites industry.
3. As part of its national Manufacturing Strategy, the Government is committed to encouraging the creation and retention of high value-added manufacturing jobs, such as those in question at Hexcel. A challenge for us is that many overseas countries are keen to attract such skilled work and offer very attractive investment packages and business operating environments to our leading companies.
4. Hexcel has told us that should the development not go ahead it would severely limit their strategic ability to compete in Europe and will affect the long-term life of the existing business in Duxford. Whilst we believe that such an impact would be detrimental to the economy in South Cambridgeshire and the Eastern Region, we are also concerned that the medium to long-term impact on the UK economy as a whole could be far reaching. As a significant US investor and a recognised leader in their field Hexcel has manufacturing plants located in other European markets and could well look to increase this further should their planned expansion at Duxford not proceed.
5. I do, of course, appreciate that in relation to planning applications, such as this one, there will be other issues which need to be considered. In addition to these, and the potential impact on the local economy, I hope that you will take into account the broader national and industrial context I have described."

51. **East of England International (UK Trade and Investment)** comments:

"Further to Hexcel Composites' recent planning application, you will be aware that Hexcel has production facilities in the UK, Spain, France, Belgium and Austria, and is now building a local production facility in Germany. Of these facilities, the UK location is their preferred choice for both pre-cursor production and fibre research and development. The UK facility in Duxford currently employs 450 people and manufactures resins, prepregs, adhesives and honeycomb core. Alongside the production plant, Duxford is home to the European research and development centre, employing 65 people.

We appreciate that in relation to a planning application, such as this one; there will be other issues which need to be considered along with the potential impact on the local economy of the potential 100 additional jobs that will be created as a result of the proposed development.

East of England International has no reservation about supporting the application made by Hexcel Composites Limited for permission to develop the site as, without this investment, the UK will lose out on leading edge carbon fibre development which would ultimately provide benefits to many market sectors along with establishing a strategic pre-cursor production facility as part of the composite supply chain. Investment in the UK would ensure composite production and development in Duxford for at least the next two decades".

52. **The East of England Development Agency** comments:

“Hexcel Composites are already a key contributor to the regional and national economy, and we would anticipate that you will be taking into account the value to the local economy that this development would add in terms of job creation.

We also hope that the Council would take into consideration the loss to the local and national economy if the development is not approved.

Hexcel has informed us that if the development does not go ahead it will severely limit their strategic ability to compete in Europe and will in the long-run affect the life span of the existing facility in Duxford. In the short term this would obviously have a negative effect on the economy in the East of England and South Cambridgeshire in particular.

It is also likely that this will also have a potentially far-reaching medium to long-term impact on the UK economy as a whole. Hexcel is a significant US investor and recognised leader in their field, with manufacturing plants located in a number of European markets, and a refusal to allow the planned expansion to go ahead could well lead them to look to increase and/or improve their European facilities instead. Once gone, this investment would be unlikely to return to our region. As part of its national Manufacturing Strategy, the government is committed to encouraging the creation and retention of high value-added manufacturing jobs, such as those at Hexcel, and the challenge today is to ensure this happens in the face of many overseas countries offering attractive investment packages and business environments to companies currently located in the UK.

We realised that when considering such applications, there are a number of other aspects that must be considered. We hope that along with these factors, and the impact on the local economy, you will take into account the wider scope of the national and manufacturing context that I outline above.”

53. **The Local Highway Authority** raises no objections subject to conditions/obligations:

“Existing Traffic

The Study completed by Hexcel’s consultants couples existing vehicular trips from Hexcel with that of Huntsman; a neighbouring company using the same site access. Using these figures, currently during the AM and PM peaks there are approximately 294 personnel vehicle movements per peak. Both companies employ shift workers who arrive and depart outside the peaks and these come to a daily total of 254 (taken from Hexcel’s personnel data). There are also currently commercial deliveries totalling 19 on average throughout the day.

Comparing Hexcel’s Travel to Work Survey with the total surveyed vehicle movements allows total 24-hour person trips to be calculated. The existing situation of vehicular movements to and from the Hexcel site entrance has been amalgamated with those movements from the Huntsman site, which utilises the same entrance. This is shown in Figure 1 overpage.

Type	Mode	Modal Split(%)	24 Hour trips
Employees	Car (Single Occupancy)	85%	456
	Car Share	10%	54
	Public Transport	0%	0
	Bicycle	3%	16
	Walk	2%	11
	Total	100%	537
Commercial Vehicles	LGVs/HGVs	100%	19
Huntsman	All	100%	320
Hexcel + Commercial+ Huntsman	All	N/A	849

Note: Huntsman figures are vehicular only

Figure 1: Existing 24-hour person trips, split by mode.

Existing Network

The iterative process of examining the impacts of any increases in Hexcel's traffic generation and attraction due to its proposed development led to concerns over local junction capacity.

Subsequent junction capacity analyses carried out identified the roundabout junction of the A505 and Hunts Road as being at capacity on two of the three arms in the morning peak at current traffic levels. Two other junctions analysed include the Hexcel site entrance onto Ickleton Road, and the junction of Hunts Road, Ickleton Road and St Peter's Street in the centre of Duxford, all of which demonstrate remaining capacity.

Proposed Traffic

The proposed extension of the Hexcel site is predicted to increase peak vehicular movements to 324 per peak. Shift worker total daily vehicular movements are predicted to rise to 320 movements (derived from Hexcel's personnel survey figures). Commercial HGV movements to and from the site are predicted to increase from 19 to 28 per day, and will continue to avoid the peaks and night-time operation. The increase in 24-hour person trips by mode is detailed in Figure 2 below.

Type	Mode	Modal Split(%)	24 Hour trips increase
Employees	Car (Single Occupancy)	85%	170
	Car Share	10%	20
	Public Transport	0%	0
	Bicycle	3%	6
	Walk	2%	4
	Total	100%	200
Commercial Vehicles	LGVs/HGVs	100%	9
Huntsman	All	100%	0
Hexcel + Commercial + Huntsman	All	N/A	209

Note: Huntsman figures are vehicular only

Figure 2: Proposed increase in 24-hour person trips, split by mode.

Junction analysis at the Hunts Road/A505 roundabout demonstrate that this increase pushes the junction further over capacity, which is unacceptable to the County Council. A nil-detriment approach is taken at the roundabout, whereby current vehicular traffic to and from the site is held at its current level and therefore must be a modal shift towards more sustainable forms of transport.

Condition 1: There should be no occupation of the extended site until a suitably strong Travel Plan has been submitted to and approved by the Cambridgeshire County Council with details of targets, monitoring, and enforcement.

Reason: The network is at capacity, any further traffic would be unacceptable at the roundabout junction of the A505 and Hunts Road, therefore new development must be accommodated within the existing traffic demand of the existing site.

Should these Travel Plan targets not be met, Hexcel would fund an upgrade of the A505/Hunts Road junction to accommodate the extra trips it causes.

Condition 2: There should be no occupation of the extended site until an upgrade for the A505/Hunts Road roundabout is agreed with the Local Authority in consultation with the Highway Authority up to a Stage 1 Safety Audit including capacity analysis.

Reason: To ensure that a solution can be found at the A505/Hunts Road junction should the Travel Plan fail and this condition be called upon.

During the construction period of Hexcel's extension, it is predicted that there will be 204 vehicle movements to the site in the AM and 204 movements away from the site in the PM. To ensure no detrimental impacts on the local network or safety in Duxford, we recommend a condition that all construction traffic should arrive at or leave the Hexcel site outside the network peaks identified in the TA as 0745-0900 and 1630-1745.

Condition 3: During construction, no construction vehicles should arrive or depart from the Hexcel site during the network peaks 0745-0900 and 1630-1745.

Reason: Highway capacity and safety concerns.

During and after the construction period, to avoid conflict with local schools and the network peaks, HGV movements leaving and entering the site should occur outside the hours of 0800-0900, 1500-1600, and 1630-1745. Hexcel practices this at present and this consideration would be expected to continue.

Condition 4: During and after consultation, HGV movements leaving and entering the site should occur outside the hours of 0800-0900, 1500-1600, and 1630-1745.

Reason: Concerns over highway capacity and conflicts with local school traffic."

54. **The Definitive Map Officer (County Council)** states "the Countryside Access Team has no objection to the development in principle, however, we are concerned to note that the access to the site during construction will cross Public Footpath No. 7, Ickleton, which runs adjacent to the site.

At the present time this footpath is soft in nature; with a grass surface, which we assume will have to be altered to accommodate the construction traffic. The developers should note that it is an offence to damage the surface of a right of way and they should contact the Countryside Access Team to discuss any changes. In

addition, we are concerned about the safety of the public using the right of way if it is to be crossed by construction vehicles. The developers should contact the area rights of way officer to discuss the change in surface and the mitigation measures that can be taken to protect the public during construction. This contact should take place BEFORE any work is begun on site. The developers should contact Dominic Doble on 01223 718403 to discuss this further. Following construction of the plant we would require reinstatement of the soft surface of the footpath to the satisfaction of the area rights of way officer”.

55. **Cambridgeshire Archaeology** states:

“An archaeological evaluation was undertaken for this site ahead of the submission of the planning application for the above new development at the Hexcel site in Duxford.

The proximity of scheduled ancient monuments and numerous extensive, multi-period archaeological landscapes known from the Cam terraces in the vicinity of this site demonstrated the intensity of past human occupation locally and the need to establish the presence, character and extent of such occupation. The results of the trench-based evaluation, however, indicted the presence of mixed chalk and till substrates that appear to have been unfavourable for habitation in this location, in contrast to the heavy use of the gravel terraces in adjacent locations.

No further work will be required a part of this development and no archaeological condition will be required on any planning consent that may be awarded for the development.”

56. **Duxford Primary School (Governing Body)** states:

“I write on behalf of the Governing Body of Duxford CE Community Primary School as we are concerned for the safety and well being of our pupils.

We object to the current proposals for the construction of a carbon fibre plant on the grounds of increased traffic levels and HGV movements past the school on Hunts Road. Extrapolating from the documents it appears that peak time 8.00-9.00 traffic would be increased 45% in Hunts Road and 59% in Ickleton Road. Once in operation the HGVs will be transporting hazardous chemicals. The plant is situated close to residential estates from which children walk to school up Ickleton Road and Hunts Road and concerns have been raised in the community about the present levels of traffic. Both these roads carry traffic from Saffron Walden and the south needing to access the M11 north bound.

The site is alongside the railway track and a link was previously installed for the transport of chemicals to and from this site. Any consent should be conditional on the transport of all heavy goods and chemicals being by rail.

We are told emissions levels from the plant would be within statutory limits and controls. However, we are not convinced that there is sufficient research into the impact of the collective emissions in this area taking into account the planned expansion of other industrial/R & D facilities in the surrounding area. In the future increases in traffic on the local roads and the nearby M11 will further reduce air quality.”

57. **The Ickleton Society** comments that the Council must ensure that all vehicles going to and from the site, both during construction and operation, access the site from the

north. The reason for this is that the roads from the south through it are narrow and winding and unsuitable for any heavy traffic at any time.

58. **The Cambridge Preservation Society** comments:

“Our main concern relates to the setting of the village of Hinxton (including the Cam corridor) and our Listed Building - the Hinxton Mill (a water mill). We consider that the proposed buildings are much higher and much closer situated and will have a tremendous adverse impact on the setting of the village edge, Listed Building and the Cam corridor as a landscape feature. The proposed extensions create a chemical plant area of less than 600m (approx 1/3 mile) away from the village edge and our listed building. The water mill is open to the public and the rural setting of the mill within a pastoral land use along the River is important - the retention of the traditional landscape setting is valued by many mill visitors and Public Right of Way/recreational users.

We object to the proposals in the current form as we consider that not sufficient design solutions have been afforded to respect the special setting and location.

However, if planning consent should be given, we suggest strongly that:

- a) A full visual landscape assessment is undertaken along the River Cam corridor and including both village edges.
- b) That façade finishes and colouring of buildings are more considerate to its setting than current buildings (n.b. buildings particularly can be seen during cooler seasons, but even in summer have an impact as buildings can be seen well above the tree line).
- c) Off site screen planting needs to be undertaken following a detailed landscape and ecological (habitat) assessment to determine location of such mitigation plantings (with reference to Hinxton village and local Public Right of Way network). It is considered that the on-site screen planting would be completely insufficient to screen the proposed tall structures.
- d) Details of potential effluents etc. are considered ensuring no damage/pollution (aerial and riverine) to buildings (including listed) and wildlife habitats and retaining livability for all.

With reference to section 106 contributions we recommend that sums are negotiated to implement and maintain off-site mitigation plantings and local ProWay routes as well as ecological habitat improvements along the River Cam”.

59. **Cambridge Trout Club** comments:

“We are concerned about the health and safety issues that could arise if the suggested development by Hexcel to build a carbon fibre precursor plant and chemical store goes ahead. We are particularly concerned to note that the chemical Acrylonitrile may be brought to and stored at the development, to be used in the manufacture of carbon fibre. This chemical is highly toxic, and it is interesting to note that other countries, including Germany and the United States, have already taken steps to protect their communities and environment from its effects.

The upper reaches of the River Cam has a population of breeding Brown Trout. This population is distributed from Audley End through Hinxton, Duxford, Whittlesford and

Hauxton and almost certainly towards the Byron's Pool area at Granchester. In addition the otter is present in the Hinxton-Duxford region of the river, and holts have been installed by the villagers of Hinxton and the Wellcome trust at the Sanger Genome complex. Kingfishers nest in the area and other species of birds and animals of a sensitive nature are also present.

Our particular concern is the possibility of leakage from the site into the floodplain of the Cam, which would have a disastrous effect on the river and its animal and plant life. Some years ago a leak occurred from the site into the Cam and the then national Rivers Authority put in place certain restrictions on CIBA Geigy to ensure that the river would be restored to its condition as an AB classified F1 Salmonid river. Needless to say the leakage which occurred at that time killed a large number of fish and other animal life of the river.

A similar leakage of Acrylonitrile into the Cam would have disastrous consequences. Hexcel's suggestion that such a leakage is 'a once in 100 years possibility' does not seem to provide an answer to the question 'What if the leakage happened in the near future rather than at the other end of their time scale?'

We are concerned also that if this development were permitted, the possible increase in the amount of water drawn from the aquifer could have a damaging effect on the Thriplow Peat Holes SSSI, and the Sawston Hall Meadows SSSI, as well as further stress on the River Cam.

I understand that other concerns have been raised about transportation of chemicals of this nature. The US Government appears to classify Acrylonitrile as 'cargo of particular hazard'.

Since the building of the M11 the Cam has experience pollution from the motorway on at least two occasions and, indeed, the Cambridge Trout Club was compensated for a spillage of oil from the motorway soon after it opened. A spillage of Acrylonitrile would surely have a greater disastrous effect than an oil spillage which resulted in a financial settlement for the Club for damage to the fishery'.

60. **The Corporate Manager (Health and Environmental Services)** comments:

"Air Quality

The proposed process will be regulated under the Pollution Prevention and Control regime and thereby require a permit to operate in a manner which will not impact upon local air quality.

The Environmental Statement submitted alongside the application includes an air quality assessment involving modelling of the proposed emissions. This concludes that emissions are not likely to contribute significantly to the background concentrations around the site and concentrations at relevant receptors (those sensitive to air pollution e.g. residential properties) are likely to meet the applicable air quality standard.

During the construction phase emissions to air may be minimised by the following actions;

- Provision of wheel washing facilities on site
- Minimising drop heights when loading spoil

- Damping down of stockpiles in dry conditions or using sheeting
- Damping down haul roads in dry weather

The applicant should adopt the principles of the considerate contractor/constructors scheme to minimise inconvenience and impacts of the development phase by implementing good construction site practices.

Land Contamination

Potentially contaminative uses have been carried out on the propose development site and there is a long history of use as a chemical works. There are also records relating to a landfill and railway siding which coincide with the site. Whilst consideration is given to land contamination in the Environmental statement there appears not to have been any intrusive investigation including soil sampling. Qualitative assessment “highlights the need for mitigation measures to limit exposure of the construction workforce to contaminants and to ensure that any contaminated material is handled correctly to prevent mobilisation of contamination into groundwater/surface water”.

If permission is granted for the development it would be prudent to include a condition requiring the developer to undertake an intrusive investigation and risk assessment prior to development commencing to ensure that the site is suitable for the proposed use. It may not be appropriate to assume that mitigation measures in the form of chemically resistant construction materials will suffice and other forms of remediation may need to be evaluated therefore the nature of any contamination needs to be assessed appropriately. If unforeseen contamination is encountered during construction then the developer ought to notify the Environmental Health Department as soon as possible.

The following condition would be appropriate:

“Prior to the development commencing an investigation of the site shall be undertaken to establish the nature and extent of any contamination of the site and any remedial works to deal with contamination. This shall initially consist of a desktop study, which will include details of the site history, development of a site conceptual model, and a preliminary qualitative risk assessment. If any likelihood of contamination is indicated by the initial study then a further detailed site assessment shall be carried out which shall include intrusive investigations and which shall fully characterise the nature, extent and severity of contamination. Recommendations for a remediation strategy and post-remediation validation testing should be included. Remedial work should be carried out before development commences. The work shall be carried out in accordance with the approved details. Any variation to the above shall be agreed in writing with the Environmental Health Department before work being undertaken. Copies of all reports should be submitted to and approved by the Environmental Health Department and the Development Services Department of the Local Planning Authority”.

Note: A guidance document on the procedures for dealing with potential land contamination will be available from the Environmental Health Department.

Traffic and Transport

The ES highlights the significant increase in vehicle movements during construction works and therefore it would be prudent to require the developer to submit and agree

a traffic management plan to ensure that transport impacts are mitigated. Once into the operational phase a travel plan should be adopted to reduce the number of single occupancy car journeys”.

61. **The Landscape Design Officer** has no objection to the revised scheme of landscaping.

“As discussed the scheme will now need detailing with regard to contouring and selection of plant species.

Existing Planted Areas

All areas of existing trees are to be retained and protected as necessary during construction. Where possible, trees with the best potential for growth should be encouraged by thinning of adjacent plants.

New Bund Planting

Bunding should offer a variety of slope and aspect, avoiding over-steep slopes and a uniform engineered appearance. Most trees will fare better in the open ground rather than planted into the bund, so at least some space should be left for open ground planting.

Size of Planting

Most trees and shrubs should be planted as fairly small bare-root plants - 450-600mm for shrubs, 900-1800mm for tree species. If planted correctly these smaller plants will soon overtake the larger ‘standard’ trees. Your landscape consultants should prepare a high quality specification for planting, including a pre-planting root dip, water retention granules, and an aftercare programme.

The above planting will take a few years to establish so this should be combined with a smaller number of very large trees planted in specific positions, which will make an immediate impact. Again the key to success will be the quality of the tree pit design, planting specification and aftercare.

Plant Species

Large trees 25-30cm girth, *Tilia cordata*, 350ltr pot grown- placed at strategic points - say 10-20 No.

Bare root trees planted at 900-1800mm, planted at approx 3m centres. Approx 550No plants.

Fagus sylvatica - (Beech)

Fraxinum Excelsior - (Ash)

Tilia Cordata - (Small leaved lime)

Carpinus Betulus - (Hornbeam)

Bare root shrubs/small trees planted at 400-600mm, planted at approx 1.5m centres. Approx 1500No. plants.

Coryus avellana - (Hazel)

Acer campestre - (Field Maple)
Crateagus monogyna - (Hawthorn)
Ligustrum vulgaris - (Wild privet)
Viburnum lantana - (Wayfaring Tree)
Taxus baccata - (Yew)
Buxus sempervirens (Box)
Rosa canina (Dog rose)

Car Park and Compound Area

After construction is complete, I would suggest additional hedge and tree planting along the southwest boundary of the site, adjacent to the cooling towers. If the car park/compound area is not to be returned immediately to productive farming, I would suggest that this area is seeded with a suitable native grass and wildflower mixture, ideally of local provenance. This will increase the biodiversity of the area, connect planted areas of the site, and will not affect possible future development.

Off Site Planting

Although not directly within your control, some off site tree planting could be achieved by negotiation with the local landowners. I would suggest some limited tree planting at specific points along the footpaths and bridleways between the new development and Ickleton/Hinxton. A small number of trees could really help in reducing the impact of the new development viewed from these pathways”.

62. **The Council’s Ecologist** is satisfied that the development site is unlikely to contain any protected species and that the area of grassland affected is relatively small and can be compensated through habitat re-creation and management.

“Having inspected the site I am reassured that the majority of the railway line is to remain unaffected (I was surprised that it contained so few plants but suspect a persistent herbicide to be present) and that the opportunities for lizards were few given the relatively tidy upkeep of the area. The most interesting plant found in the railway was dropwort - dry chalk soil species.

Should outline permission be granted then I would recommend that a condition be attached requiring an Ecological Management Plan to be submitted for approval. Within such a plan we could agree (with an independent ecologist being used) the extent of wildflower meadow creation, the areas of existing grassland to be maintained, a watching brief for protected species such as breeding birds, badgers and common lizard. Methods of reducing the impact on ground nesting and hedgerow birds could also be agreed. The arable area could also be surveyed prior to its use as a car park and its future use discussed with Huntsman. This would deliver a medium term gain whilst the land’s use was further considered).

Enhancement opportunities should be explored in order to demonstrate how the application could provide a biodiversity gain:

1. Management of the railway cutting slope at an agreed point (would ensure the botanical interest is sustained).

2. Wildflower planting amongst the tree and shrub belt (would provide some grassland habitat for brown hare and partridge).
3. Provision of various nest boxes.
4. Wildflower meadow creation on unused land within the site.

The use of green (vegetated) roofs would strengthen the application in terms of landscape impact.

Putting aside the planning issues, I would be very keen to advise further on the erection of swift boxes given the fact that a nearby colony nest site is about to be taken down.

63. **Andrew Lansley CBE, MP** has met the applicants and attended a public meeting in Hinxton. Under the Freedom of Information Act he has requested the assessment papers from the Health and Safety Executive, but this has been declined. He has lodged an appeal.
64. **The Rt. Hon. Sir Alan Haselhurst, MP (Saffron Walden)** comments:

“I appreciate that the matter to which it refers lies entirely within your responsibility, but I would be failing in my duty if I did not emphasise to you the concerns felt in Great Chesterford which geographically is so close to you. I hope that these worries will be borne in mind”.
65. **The Imperial War Museum, Duxford** has not commented.

2. S/1703/06/H.S.C. - STORAGE OF ACRYLONITRILE

66. **Duxford Parish Council** recommends approval but would point out that they do not have the necessary expertise to make a fully informed judgement and would therefore rely on the final decision of the Health and Safety Officer.
67. **Hinxton Parish Council** objects (see previous comments).
68. **Ickleton Parish Council** approves (see previous comments).

The concerns raised by Hinxton Parish Council regarding the chemical Acrylonitrile were noted.
69. **Sawston Parish Council** objects (see previous comments).
70. **Great Chesterford Parish Council** objects and “would like to see independent expert opinion on the transport and storage of Acrylonitrile.”
71. **The Environment Agency** comments:

“Hexcel Composites are currently regulated under the Pollution Prevention and Control Regulations. Their proposal for hazardous substances consent for the process, polymerisation of Acrylonitrile, will involve the company submitting an application, to the Environment Agency (EA), for a substantial variation to their PPC permit. This will incorporate the process into their PPC permit. Pre-application discussions will take place regarding requirements for this application.

In addition, the site will fall under the COMAH (Control of Major Accident Hazards) regulations as a top tier site due to the quantities of Acrylonitrile on site. A safety report will have to be produced once Hexcel has notified as top tier encompassing all aspects of the COMAH regulations. As above discussions will take place with the EA and HSE prior to the process equipment being installed to ensure all requirements under COMAH are met.

INFORMATIVE: The proposed Acrylonitrile storage site is 100m from the LS96 and LS 922 closed special waste landfill sites. The storage of these chemicals is considered risk neutral from a landfill gas context."

72. **The Health and Safety Executive** comments:

"The Health and Safety Executive (HSE) has assessed the risks to the surrounding area from the likely activities resulting from the granting of the proposed Hazardous Substances Consent.

Only the risks from hazardous substances for which consent is being sought have been assessed, together with the risks from substances in vehicles that are being loaded or unloaded. Risks which may arise from the presence of other substances have not been taken into account in this assessment.

HSE has not been able to take account of any proposed developments in the surrounding areas that have been granted planning permission but are not yet built. This may also apply to existing developments that did not appear on the maps accompanying the consent application. Since this may affect our advice please consult HSE again if there are any such developments within the Consultation Zone proposed on the map referred to below. The exception to this is the population on the adjacent major hazard site at Huntsman Advanced Materials Ltd for which we have the required information.

In considering this application for Consent HSE has made the assumption that the requirements of the Health and Safety at Work etc. Act 1974, and all relevant statutory provisions, will be met at the establishment should Consent be granted. Accordingly HSE advises that you should direct the applicant's attention to section 29 of the Planning (Hazardous Substances) Act 1990. This makes it clear that nothing in any Consent granted can require or allow the building or operation of an establishment which does not comply with the relevant statutory provisions and to the extent that any consent purports to require or allow any such thing it is void.

On the basis of this assessment, HSE has concluded that the risks to the surrounding population arising from the proposed operation(s) are such that there are no significant reasons, on safety grounds, for refusing Hazardous Substances Consent.

Following Central advice that particulars in the application on Form 1 do not automatically become conditions of consent, it would be beneficial to include a condition such as:

"The Hazardous substances shall not be kept or used other than in accordance with the application particulars provided in the Hazardous Substances Consent Application Form, nor outside the areas marked for storage of the substances on the plan which formed part of the application."

The following additional condition is suggested:

“The maximum number of deliveries of Acrylonitrile will be limited to 654 per year.”

In reaching this conclusion the following assumptions have been made.

1. The hazardous substance for which consent is being requested is Acrylonitrile.
2. This is substance number 33 in part A of Schedule 1 to The Planning (Control Of Major-Accident Hazards) Regulations 1999. The application form has been wrongly completed with substance number 3, which is the entry for Acrylonitrile from Part A of Schedule 1 of The Planning (Hazardous Substances) Regulations 1992.
3. The road tanker offloading area will be adjacent to the 200 cubic metre storage vessels.

A consultation zone has been established should the application be approved.”

Cambridge Preservation Society objects (see previous comments).

The Corporate Manager (Health and Environmental Services) states the application has no significant impact from the Environmental Health standpoint.

Representations (Both applications)

1. Pre-Amendment

73. 84 objections were received, and 2 letters of support.
30 letters were received from Duxford, 46 from Hinxton, 9 from Ickleton and 1 from Cambridge.

The main points were:

1. The application site is not designated for employment use and therefore the proposed development is contrary to the Development Plan. Further industrial development would be detrimental to the rural area and set an unfortunate precedent for other sites.
2. Acrylonitrile is a highly toxic chemical. It is a carcinogen, a teratogen (birth defects), causes kidney/liver damage and in powder form is a skin irritant and toxic by inhalation. It is extremely volatile (low boiling point and flash point of 0°C). The Carbon Fibre process involves high temperature processing of polyacrylonitrile from highly flammable Acrylonitrile and other chemicals. This poses an unacceptable fire and safety risk to the surrounding villages. Any lapse in safety procedures would result in the release of toxic chemicals into the air - affecting the human population and also wildlife since it is highly soluble in water. There have been 4 explosions worldwide involving Acrylonitrile - in Finland (2202), Japan (1991), USA (Alabama) and Australia.

The polymerisation of Acrylonitrile can lead to a runaway reaction, generating high temperatures and pressures, sufficient to breach the containment vessels. The deadly gas, hydrogen cyanide, would be released.

Study of infants and mothers living within 25km radius of an Acrylonitrile factory in Hungary detected significant clusters of congenital abnormalities, which decreased with increasing distance from the factory.

Toxic chemicals will be stored on site and will increase 8 fold from 50 tonnes to 400 tonnes. This will increase the classification to 'high risk' and necessitate implementation of additional safety and warning systems.

The predominance of accidents occur in the transfer of the chemical from tanker to storage due to static build-up. It carries a World Health Organisation warning regarding spillage and explosion.

A spillage or explosion may affect the health of children playing nearby and at the primary school. Children are more vulnerable to chemicals than adults. There are over 200 pupils on roll at the primary school.

Processing plants for the chemical in other parts of the world are situated far from residential areas. The area is too populated - a disaster would affect a large number of people. If there was a disaster, a cloud of gas could even reach other villages e.g. Sawston.

3. Acrylonitrile is a highly explosive and toxic chemical and it should not be transported by road tanker from the north-east of England via some of England's busiest roads (A1, A14, M11).

In the US it is classified as a 'cargo of potential hazard' and a permit is required to transport it. The tankers are escorted front and back. Germany does not allow road transport of the chemical. In the UK the Government advice is not to transport the chemical by rail through built-up areas.

The tankers will have to pass housing in Duxford and the local primary school.

The village roads are unsuitable for large vehicles - children walking, cycling, dog walkers and horses.

4. The site is adjacent the floodplain and there is a serious risk of pollution from spillage. The site is in the catchment of the Granta, which is prone to flooding in winter. Flood risk 1 in a 100 year possibility according to applicants. This is unacceptable. Does not take account of global warming and the curtailment of the floodplain by recent building. Flooding already occurs around Duxford Mill and Audley end. The massive foundations and alterations to the 'lie of the land' required will increase run-off from the site and exacerbate flooding.
5. Aeroplanes from the Imperial War Museum at Duxford have crashed in nearby fields. The site is underneath the downwind leg of the westerly landing at Duxford. It is not possible to control an airplane with any accuracy in an emergency situation. Proposed plant could lead to a curtailment of air displays.
6. The application site is only one field away from the highly flammable gas compressor station on Ickleton Road.
7. On Grange Road, Ickleton there are newly built storage bunkers to hold highly combustible nitrate films which could also be at risk if there was an explosion.

8. The former Ciba Geigy site is already “a blot on the landscape” situated on the edge of a beautiful village and the proposed development will only worsen the situation.
9. The proposed buildings are too high - they should be lower and dug into the ground. With the exception of the chimneys, the current site blends broadly with the scale of surrounding trees and houses. The proposal, by contrast, involves 2 buildings 29m high, one 20m high, 4 chimneys emitting steam plus 7 large chemical tanks. Height is a major problem in a low lying, flat area - the structures will be visible from miles around.
10. There will be a loss of agricultural land, trees and hedgerows, with a consequent impact on wildlife (eg lapwings). The proposed landscaping is inadequate.
11. The proposal will affect the biodiversity of the surrounding area, including farmland and, a recently established wetlands reserve and land Stewardship Conservation acreage. Several ‘Red Book’ species will be affected by the development, including the otter, brown hare and skylark.
12. The removal of boundary trees will reduce enjoyment of the public footpath to the south. Its use may be disrupted during construction.
13. The proposal will put an unbearable strain on the existing borehole water supply, which is already near maximum capacity.
14. No benefit to local community from the development. The workforce will be expanded but minimal employment opportunities for local residents, partly because an area of full employment.
15. At present many workers at the site use Moorfield Road to access the site, passing along the main village street. 100 extra jobs will increase the problem, particularly during the 3 year construction period.
16. The rail link into the site should be used instead of road transport.
17. Not clear whether studies have been carried out to prove that the processes, materials and by-products (including waste and exhaust gases) involved are sustainable. If not, they are in direct contravention of U.N. Environmental Programme - Agenda 21.
18. There will be an increase in light pollution.
19. Manufacture using hazardous chemicals has been scaled down on the site in recent years. This proposal reverses the trend to the detriment of Duxford.
20. The applicant states Carbon Fibre is required for the Airbus project, but demand in aviation is very prone to major upsets (terrorism/economic criteria/ fragility of the dollar). Both Airbus projects (A380 and A350) have major problems and an uncertain future: if the application is approved could be left with a ‘white elephant’.
21. No indication of plans to utilise photovoltaic solar panels. Wind power should be investigated.

22. Hinxton has already seen the large development of the Wellcome Trust at Hinxton Hall. Another development will be highly detrimental to the village.
23. Views from the rear gardens of Hinxton properties will alter for the worse, particularly in winter. The Applicants artist impressions are misleading - they are taken in the summer and show trees at some point in the future, not as they will appear initially. Noise is also experienced from the site and this is likely to get worse.
24. Currently there are noxious smells from the site, particularly on Hinxton Road, behind the factory. Residents in Duxford are disturbed by warning sirens.
25. The former Ciba Geigy site has a history of contamination - sticky deposits had to be scraped off car windscreens.
26. The quality of life in the area has declined. There is a halo of orange light at night which will get worse. The growth of the Wellcome Trust at Hinxton and increasing noise from the M11 and A11 are contributory factors.
27. The Company adjacent the application site (Huntsman) have made an L.D.F. representation to develop the part of their site closest to the village for housing. The proposed expansion of the industrial site is incompatible with this representation.
28. The recent Buncefield explosion at Hemel Hempstead demonstrates that every system is fallible, however well designed.
29. There will be unacceptable noise disturbance to local residents during the construction period.
30. There is a national increase in allergies and asthmas which could be caused by pollution. The development will increase the levels of pollutants. An existing asthma sufferer experiences problems cycling along Hinxton Road past the existing factory because fumes escape from fire exits which are left open.

The main points of support were:

1. The development will bring much needed jobs in the chemical industry following the contraction of the former Ciba site and closure of the plant at Hauxton.
2. There is no dispute about the toxicological and ecotox profiles of the chemicals involved - they are well documented. The key issue is whether the equipment and procedures proposed will result in safe usage. (As a chemist previously employed at the site he is satisfied acceptable safety standards will result given the thoroughness of the application).
3. The Hinxton Action Group Newsletter is alarmist.

2. Post Amendment

11 further objections were received, 9 from Hinxtton, and 1 each from Duxford and Ickleton.

The letters repeat the concerns previously expressed. Several objectors make the point that the additional landscaping now proposed will not screen high buildings, even in the long term, or mitigate the danger the proposal embodies.

A letter of objection from a Hinxtton resident with a high degree of technical content was referred to the Applicants for comment and the detailed objections/responses are itemised below:

Objector's letter received on 2nd July 2007:

"Having worked for 35 years at a senior level in the chemical and pharmaceutical industries, and having consulted Health and Safety and Medical Specialists in this field I have concluded that the information provided by Hexcel is grossly misleading and that the Health and Safety Report has a number of serious errors and omissions".

Hexcel claim that they are unaware of any EU country that bans the use of Acrylonitrile. We have previously provided SCDC with this information. Hexcel's comment is therefore misleading.

There is no basis for this assertion. All EU countries allow the transportation and use of Acrylonitrile ('AN') under normal restrictions for similar chemicals.

Hexcel claim that the proposed site is in an 'Established Employment Area'. This is misleading. The proposed site is NOT zoned for employment and is currently used for agricultural purposes.

The application shows that all but a very small area to be developed falls within the brown field or developed part of Hexcel's site. The temporary construction site on Huntsman land will be returned to its current condition.

Hexcel have claimed that it is essential that their planning application be approved so that they can become the sole source of carbon fibre for use in Airbus products and that currently the only other suppliers are in the USA and Japan. In Hexcel's letter of 6th June they state, correctly, that there are eight other producers of Acrylonitrile in the EU. This is misleading as Hexcel do not intend to manufacture this precursor, rather they will use it in the manufacture of carbon fibre. It is the use rather than the manufacture of Acrylonitrile that is particularly hazardous.

The application clearly explains that it is sought for permission to construct a plant to manufacture polyacrylonitrile ('PAN'). This is the precursor to Hexcel's carbon fibre. The carbon fibre is manufactured in Spain.

Hexcel claim that Acrylonitrile is NOT a carcinogen. The ICSC data file dated March 2001 claims that this chemical IS a carcinogen.

This is grossly misleading. Hexcel has stated at “(AN) is a class 2b carcinogen which carries the risk phrase ‘ may cause cancer’ (letter to Parish Councils dated June 2007) and ‘.....AN is rated as a possible carcinogen’ (Para 3.2.3 Further Information to SCDC 5th June 2007).

The ICSC (International Chemical Safety Card) states ‘This substance (AN) is possibly carcinogenic to humans’. Nowhere does it state that AN is a carcinogen.

Similarly Hexcel quote an unnamed source to claim that there is no long-term health hazard with this chemical. The latest ICSC and WHO reports suggest otherwise.

The study to which we referred was that of the National Cancer Institute of the US which found no evidence of an overall increase risk for cancer death *or any other cause of death* in 25,460 workers between 1950 and 1983.

The ICSC states “Repeated or prolonged contact may cause skin sensitisation. The substance (AN) may have effects on the central nervous system and liver. This substance is possible carcinogenic to humans”.

The WHO reports which Hexcel have seen indicate that exposure may cause dermatitis, headaches, irritation to eyes, nose and throat and in some cases nausea, vomiting, etc. It adds “The symptoms were reversible”. We understand this to mean that all these symptoms disappear.

We understand that all these studies were on workers with regular and direct contact with AN, since when procedures for dealing with AN have improved. There are no reports of any more remote group suffering any long term effects.

Hexcel use a 1999 WHO report to claim that there are no links between cancer, birth defects and Acrylonitrile. The ICSC data sheet dated March 2001 does not support his conclusion.

This is simply not true. As stated, ICSC describes AN as ‘possibly carcinogenic’ and it makes no reference to birth defects. We can see no reference to any AN causing birth defects in humans.

Hexcel claim that there were no deaths in the 8 recorded incidents at Acrylonitrile plants. This claim is correct but misleading. There were no deaths because the manufacturing plants were sited well away from populated areas. The proposed planning application, if granted would put large numbers of people at serious acute and chronic risk.

The incidents with AN have taken place in a variety of different settings (not just on manufacturing sites) without loss of life. There is no evidence that ‘large numbers of people (would be put) at serious acute and chronic risk; beyond the site from any foreseeable major incident. When assessing the impact of a major spillage Hexcel has used standard global modelling methods used in the planning application and accepted by the HSE and EA.

Hexcel claim that there will be NO emissions from the plant. This is not possible as storage is vented and there is ample evidence, including that from plants in the USA that Acrylonitrile does leak into the environment.

Hexcel actually stated that there will be no emissions from the plant 'that will have an adverse affect on humans or wildlife in any way either through air born discharges or aqueous discharges in the River Cam'. (Hexcel letter to Parish Councils 6th July 2007).

Hexcel claim that a 1 in 200 year flood assessment concluded that the proposed site would not be flooded. The site HAS been flooded twice in recent months.

This quite simply is not true. We can categorically state that the site has not been flooded.

Hexcel quote UN agenda 21 to support both technical development and the production of lighter materials to enable aircraft to become more carbon efficient. Although this is accepted, the overall carbon footprint of transporting Acrylonitrile by road tanker to Duxford, and then shipping the finished material to assembly plants in Toulouse negates any reduction in environmental impact.

Hexcel will actually ship PAN to our sister plant in Spain which makes carbon fibre. Hexcel truly believes that the environmental impact of all these steps is far outweighed by the consequent benefit in much lighter aircraft.

Hexcel are misstating the local concerns about the hazards that would occur during tanker transportation. The transportation of Acrylonitrile is highly regulated in most countries including the UK. In the USA a license is required before the material may be moved by road. Given the particularly high accident rate on the A14, the real risk of a major incident during transportation within the country should be fully considered by the appropriate authorities.

The transportation of AN is no more regulated than petrol or similar. No special license is required in the US.

Hexcel make no reference to the need for enhanced emergency services and medical facilities. In the event of a major spillage, fire services would have insufficient appliances and specialist breathing and resuscitation equipment. Addenbrookes hospital would have insufficient facilities to provide emergency resuscitation and 24 hour intensive care support for large numbers of casualties. The cost of these additional requirements should be met by Hexcel.

Whilst we do not wish to underestimate the potential impact of a major spillage of AN on a road or in our site, we question the basis for the assertion that the emergency services would have insufficient appliances and facilities.

74. **Further Information from the Applicants (5th June 2007)**

1.0 Introduction

- 1.1 As part of the public consultation carried out by the Council in respect of the applications, a sizeable number of representations have been made, covering a number of distinct issues.
- 1.2 It is apparent to Hexcel, from a review of these representations, that there are a number of potential misunderstandings as to the consequential effects of the proposed development, both at the existing Hexcel operational site at Duxford, and in respect of the proposed new development. This document sets out the company's considered response to a number of the issues raised in the representations. In the company's view it is very important to put the substance of such representations in full context.
- 1.3 Key to this is the issue of potential risk. Hexcel's operations - both current and future - can only be undertaken with the full approval of the regulatory agencies - primarily the Health and Safety Executive (HSE) and the Environment Agency (EA).
- 1.4 Every activity - especially industrial processes - has a potential risk, and in any event a residual risk, however insignificant. By definition any risk can only be reduced not eliminated. Within the framework of the regulatory systems, it is the responsibility of Hexcel to ensure that the residual risk associated with the CFP process would first be designed, then maintained and operated below the agreed acceptable limit to the general public.
- 1.5 It is an established tenet of national planning policy that:
"Any consideration of the quality of land, air or water and potential impacts arising from development, possibly leading to an impact on health, is capable of being a material planning consideration, in so far as it arises or may arise from any land use". (Planning Policy Statement 23; Planning and Pollution Control paragraph 8 (PPS23).
- 1.6 PPS 23 also notes, at paragraph 10 that:
*...The planning system should focus on whether the development itself is an acceptable use of the land, and the impacts of those uses, rather than the control of processes or emissions themselves. **Planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced.** They should act to complement but not seek to duplicate it." (emphasis added).*
- 1.7 The issue of sustainability is a key facet of Government Policy generally and land use-planning policy specifically, as set out in paragraph 3 of PPS1 'Delivering Sustainable Development'. As part of that, the United Nations Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally by organisations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment. UN Agenda 21 recognises the need to support the progress of technology in order to use the world's energy resources more efficiently. The proposed CFP plant will produce carbon-fibre precursor material (PAN). The carbon fibre will ultimately be used in the production of the next generation of commercial

aircraft, such as the Airbus A350. The use of carbon fibre in aircraft wings, fuselages and tails reduces atmospheric carbon dioxide emissions by making planes lighter and therefore more fuel-efficient. In this context the CFP plant is an industrial process which both supports and enables the key principles of UN Agenda 21.

1.8.1 Against that background, this document seeks to set out, on a factual basis, further information and clarification in respect of the company's proposed development. The information is set out in four main sections, which deal with each of the main topic areas raised in the representations made to the District Council, namely:

- The economic case in support of the company's proposals;
- Issues of health and safety and public risk;
- Other environmental effects, including traffic issues; and
- Community Effects

This document is not intended as a point-by-point rebuttal to the individual representations made to SCDC. It does, however, provide Hexcel's overall response to the issues raised.

2.0 The Economic Case

2.1 Hexcel wish to establish a CFP plant in Europe to support its European customer base. The company has a number of production sites in mainland Europe, but none of these have the necessary space or infrastructure to support a CFP plant. A full explanation of the business case was set out in detail in the EIA. The potential expansion capacity of Decatur, the company's existing CFP site in Alabama, USA is also limited; Decatur is within a tornado risk area that, as Hexcel's only CFP plant, makes single point expansion more vulnerable to disruption. From the company's logistical viewpoint, the Duxford site provides the 'best fit' of all the European production sites for this kind of development. Both the Duxford site - and the personnel employed there - have a long and proven track record with chemical processing and the handling of hazardous chemicals. The Duxford site is also the current base for Hexcel's European Research and Development Department. This unique technical and managerial knowledge base makes the Duxford site the preferred location for a CFP plant. It already has the necessary support infrastructure in terms of process expertise, logistics (road/rail access), planning, Health Safety and Environmental Protection (HSEP) systems, quality systems, utilities, maintenance and engineering to satisfy the operational needs of the proposed plant.

2.3 As set out in the EIA, the development of the CFP plant is a key part of Hexcel's commercial relationship with Airbus. The United Kingdom is one of the four main Airbus partner countries; the UK, Spain, France and Germany. Maximum strategic benefit would be obtained by the location of the plant in one of these four countries. Hexcel does not have any suitable sites for a CFP plant in Spain, France or Germany.

2.4 The proposed CFP plant will employ up to an additional 100 personnel in total; about 70 of these will be manufacturing jobs with the remainder employed in administration and scientific support roles, helping to bring more manufacturing jobs into the local area.

3.0 Issues of Health and Safety and Public Risk

3.1 A substantial number of the representations made in respect of Hexcel's proposals relate to the key aspect of health and safety and public risk. Many of the representations seek to draw attention to specific concerns in respect of the processes proposed to be used in the development, and the materials to be employed. Of particular concern to a number of the respondents is the nature of a key process chemical, Acrylonitrile.

3.2 Acrylonitrile

- 3.2.1 Acrylonitrile (AN) is a liquid chemical. AN has a flash point of 0°C and is therefore classified as highly flammable. It has a high auto-ignition temperature of 481°C, some 400°C above any proposed processing temperatures in the CFP process. Under normal operating conditions therefore there would be no explosion risk arising from the use of AN on site. AN is classified as being toxic by inhalation, contact with skin or if swallowed. It is irritating to the respiratory system and skin, and there is also risk of serious damage to the eyes in case of eye contact. Skin sensitisation is possible by skin contact.
- 3.2.2 In excess of 5 million tonnes of AN is produced worldwide, and this figure is growing by approximately 3% per year. Nearly half of the world's AN production (2.4 million tonnes per annum (tpa)) is subsequently used to manufacture acrylic fibres in processes similar to the CFP process. A further quarter of the world AN production is used in the manufacture of everyday plastics such as ABS (Acrylonitrile butadiene styrene). Hexcel is not aware of any EU countries that do not allow the use of AN. There are 8 AN producers and about 22 AN industrial users within the EU.
- 3.2.3 To help put the AN risk into perspective, Benzene is a *known* human carcinogen; whereas AN is rated as a *possible* human carcinogen. People are regularly exposed to benzene whilst filling up their cars as benzene is one of the chemicals found in petrol. This voluntary exposure to a *known* carcinogen is much higher than would occur from any AN emissions from the proposed CFP plant.
- 3.2.4 Studies carried out in the United States on AN workers over a forty-year time span have shown no long term health effects. BASF the UK have found AN workers are typically exposed to around 0.3 ppm (parts per million) of AN on average, whereas the 8-hour workplace exposure limit in the UK is 2 ppm. At the plant site boundary the predicted AN concentration is 0.001 mg/m³ (or 0.45 parts per billion) thus equivalent to 1/4,400th of the workplace exposure limit or 1/600th of the average AN worker exposure.
- 3.2.5 The substantial epidemiological data that exists for AN including the most recent studies indicate there is no evidence to support a casual relationship between AN exposure and human cancer. It is known from animal studies that AN is an animal carcinogen at high dosages; current policy for carcinogen rating is that known animal carcinogens receive what is termed a category 2b rating and the risk phrase R45, "may cause cancer" even if there is no evidence of an actual cancer risk to humans.
- 3.2.6 In the light of four major AN health studies in the UK, Netherlands and U.S., a conference was held in Oxford in 1997 to consider overall health data for AN

workers, at which it was agreed that there was insufficient evidence to conclude that exposure to AN is associated with an increase in human cancer. As part of the papers presented at the conference, Drs David Coggin Environmental Epidemiology, Southampton General Hospital, and Philip Cole of the University of Alabama, concluded: ***“Thus despite its carcinogenicity in animals, there is little evidence to suggest that (Acrylonitrile) causes cancer in humans.”***

- 3.2.7 AN is not classified as a mutagen.
 - 3.2.8 Existing animal data does not show any clear indication of fertility, reproductive or teratogenic effects of AN; as such toxic to reproduction is not considered appropriate.
 - 3.2.9 The Dangerous Toxic load of AN is given as 9600 ppm (minimum) by the Health and Safety Executive document *“Toxicology of substances in relation to major hazards”*. The Specified level of Toxicity (SLOT) for humans is given as 40 ppm for 4 hours; this value is used in the generation of land use planning zones. The calculated risk of harming a person offsite is less than 0.3 in a million years and thus the risk of fatality could only occur through a prolonged exposure to a high AN concentration.
- 3.3 **The Process**
- 3.3.1 At start-up the CFP plant would use approximately 4000 tonnes per annum of AN.
 - 3.3.2 The CFP plant will store a maximum of 400 tonnes of AN on the site at any one time in two separate tanks. The CFP plant would receive AN in road tankers of around 24 tonnes capacity, filling into a storage tank. Each storage tank will have a level sensor and a high level alarm system, warning when the tank level reaches 90% of the capacity of the tank. A delivery of AN will only be accepted if there is sufficient storage capacity available in the AN storage tanks.
 - 3.3.3 As a second level of protection, the high level alarm will be interlocked to the tanker offloading pump, automatically stopping the transfer of AN into a tank if a high level is detected. **Comparisons made, by a number of representations between the proposed development and the incident at Buncefield, in Hertfordshire in December 2005 are fundamentally incorrect. The Buncefield incident occurred because a pump did not stop once the tank was full. The risk of this type of incident happening at the plant site would not arise, as the AN would not be pumped into site via a pipeline and there would be only a finite tanker volume that would be transferred at any one time.**
 - 3.3.4 The CFP plant will only produce Polyacrylonitrile fibre, the precursor used to make carbon fibre, not the final carbon fibre itself. The CFP process does not use flammable liquids at high temperatures. The production of CFP takes place at temperatures below 100°C as the process is aqueous, not at elevated temperatures such as those used in converting the CFP into the finished carbon-fibre product. These latter operations do not take place at the Duxford site.
- 3.4 **What are the hazards associated with the materials to be used?**
- 3.4.1 As part of the EIA, ‘dispersion modelling’ (as accepted by the HSE and Environment Agency) was carried out to look at the effect of a ‘catastrophic’ tank failure, meaning the complete rupture of a storage tank and subsequent loss of

containment; this is a highly unlikely event but was considered as a 'worse-case' scenario. The results of this modelling showed that there would be no significant consequences of this event at any residential property. Assuming that a 30m diameter pool of AN was formed adjacent to the storage tanks, there would be less than a 0.3 in 1 million chance per year of harming a person within an area of some 300m radius from the proposed plant or beyond. That area would encompass the existing Hexcel site, a small part of the adjacent Huntsman site, and agricultural land, but would not include any residential properties or extend as far south west as the Transco gas installation (see also below). Risk would rapidly reduce with increasing distance. This 300m radius is broadly coincident with the edge of the HSE consultation zone in terms of land use planning restrictions relating to the storage of AN. The dispersion modelling did not take into account any on-site mitigation systems such as the foam deluge system, or the specific design of drainage systems to minimise the surface area of a spillage etc. **The results of the modelling shows there would be no off-site consequences even in the worst case scenario of an AN tank failure.** The probability of a catastrophic tank failure can be considered negligible, as the storage tanks will be designed to British Standard SB2654 or above and inspected on a regular scheduled basis. Plant operators will also conduct area patrols to inspect equipment. AN is not corrosive to steel from which the storage tanks will be constructed.

3.4.2 In addition to these safety features, the following systems would act to minimise any potential risk should an accidental spill of AN occur:

- a) A fully sealed bund around the AN storage tanks would be provided with a minimum of 110% of the capacity of the storage tank. This bund would be designed to retain the contents of the storage tank in the highly unlikely event of a catastrophic tank failure. This is standard practice for chemical storage tanks.
- b) A gas detection system in proximity to all areas where AN would be used to detect even very small amounts of AN in the air, alerting plant operators to the possibility a spillage of some type has occurred.
- c) A foam deluge system covering the AN storage tanks would be installed. The foam system would serve two roles, either to extinguish an AN fire or to minimise the vaporisation of AN if it has spilled into the bunded area. Ground level and aerial firewater points would also be installed.
- d) A self-contained drainage system with catch pits surrounding the tanker offloading area would serve to collect any minor spillage of AN or other chemicals. The catch pits could then be pumped out into the effluent storage tanks where the waste would be held for biological treatment or offsite disposal.
- e) Any residual AN spillage that gets through the tank bunding and drainage catch pit system would have the potential to enter the site surface water drainage system, used to discharge surface water from the site. As the site handles chemicals at present, a Total Organic Content (TOC) monitor continuously monitors the surface water drains for signs of organic chemical contamination. In the event contamination is detected, surface water would be diverted to a holding area in the effluent treatment plant and would not enter the River Cam.

3.4.3 The accident containment measures thus give several layers of protection in case of an AN spillage; and in the context of the degree of risk, this is considered wholly appropriate to minimise the risk to both people and the environment in the event of an accident on-site.

3.5 What is Hexcel's Safety Record?

3.5.1 The Hexcel Duxford site has an excellent safety record. **The site has in the past stored and handled materials of similar hazard to AN in significantly greater quantities without incident.**

3.5.2 All industrial sites are subject to stringent emission limits either from the Environment Agency, or in the case of smaller installations the local authority. The EA imposes limits on emissions to air and water. The Hexcel site already has a Pollution Prevention and Control (PPC) permit as noted above. Hexcel reports its environmental performance to the EA in quarterly and annual reports.

3.5.3 Hexcel has operated a CFP plant in Decatur, Alabama, USA for over 15 years without incident.

3.5.4 **Hexcel has carried out research into the accidents involving AN that have occurred throughout the world in the last 15 years, from 1991 to 2006. On average there has been one accident every two years, none of them involving the loss of life and only nine persons requiring any type of hospital treatment. A more detailed analysis of relevant incidents is set out at section 3.8 below.**

3.6 What could be the health effects of the use of Acrylonitrile?

3.6.1 It is Hexcel's view that there will be no likely public health effects arising from the use of Acrylonitrile at Hexcel. Hexcel's primary responsibilities in the use of AN are in respect of workers on site and the local population. Self evidently, the former group is at a greater potential risk. As noted above the AN concentration at the site boundary will be less than 1/600th of the average AN worker exposure. Long-term studies of both AN workers and populations surrounding facilities using AN have not established any link between AN exposure and cancer or birth defects.

3.6.2 In 1997-98, four major health studies involving 34,686 AN workers throughout the world came to the conclusion that exposure to AN does not increase cancer risk. One major study by the National Cancer Institute (NCI) followed 25,640 workers employed at U.S. plants that produced AN or used it to make other products from the 1950s to 1983. The study tracked workers' health records through until 1989, and found no evidence of significant increase in risk from cancer death or any other cause of death due to exposure to AN. Regular medical checks are standard practice in the chemical industry where employees have the potential to be exposed to chemicals. It is these regular medical checks that have found no link to an increased risk of cancer or other cause of death in AN workers.

3.6.3 In 1998 the published findings of long-term longitudinal studies of AN workers found no significant effects in that population. The World Health Organisation (WHO) report published in 1999 claimed to have established a link between AN, cancer and birth defects. The study looked at congenital abnormalities

within 25km of a Hungarian factory using AN between 1980 and 1996. However, in January 2000 the same team published a corrigendum to the main report stating that there is no link to cancer or birth effects in the workers at the plant or their families, essentially withdrawing the findings from the first report. The corrigendum states:

“The findings of the study seem to confirm the null-hypothesis, i.e. no effect of Acrylonitrile contamination for people living near to the factory”.

- 3.6.4 The likely emission levels from the plant have been set out in the EIA submitted with the planning application. The emission data from a current CFP plant in Decatur was used to predict the local concentrations of AN, oxides of Nitrogen (NO_x) and Oxides of Sulphur (SO_x). The latter two compounds are formed during the combustion of natural gas or light fuel oil. Hexcel commissioned consultants to carry out predictive dispersion modelling of the predicted plant emissions for AN, NO_x AND SO_x.
- 3.6.5 The results of this modelling indicate that the plant emissions are significantly better than the assessment criteria for local air quality. The workplace exposure limit (WEL) for AN is 4.4 mg/m³ (2 ppm) for 40 hours per week. At the site boundary the predicted AN concentration is 0.001 mg/m³ equivalent to 1/4,400th of the workplace limit, or 0.02% of the Time Weighted Average. The generally accepted rule of thumb is that the maximum boundary concentration should not exceed 5% of the TWA, this would be 250 times higher than the predicted concentration on the site.

3.7 The Stance of the regulatory agencies

- 3.7.1 The Health and Safety Executive and the Environment Agency have confirmed to the SCDC that they have not found any grounds to object to Hexcel's applications. Hexcel are still in discussions with the Highways Authority which has only recently responded to the applications with a request for more information.

3.8 Other Issues in respect of Health and Safety and potential public risk

- 3.8.1 In view of proximity to Duxford airfield, airfield, a number of representations have contended that there would be risk of an aircraft crash. The risk of an aircraft crashing onto the AN storage tanks on site is statistically the same as the background aircraft crash rate for the UK. A report produced by the HSE on the subject of aircraft crash states that there is no increased risk due to local flying areas and that the background UK crash rate should be used. Using the background UK crash rate and the area of the AN storage tanks gives a probability of less than a 1 in 1.5 million year chance of this occurring. There have been no incidents of aircraft colliding with domestic or industrial buildings in the area around Duxford and planes from Duxford are specifically routed not to fly over the Hexcel site. Hexcel actively enforces this routing around the site and has in the past lodged complaints with the Imperial War Museum on the rare occasions that overflying of the Hexcel site has taken place.
- 3.8.2 A number of representations draw attention to incidents, or alleged incidents elsewhere in the world where AN was involved. Particular references are made to incidents at Kaipiainen, Finland in 2002, Alabama USA in 1994, Amersfoort, Holland, in 2002, and a lightning strike in Brazil in 1992. These are

considered further below. A list of AN incidents over the last 15 years has been collated and is given at the end of this section.

- 3.8.3 The incident at Kaipiainen, Finland, in 2002 arose from the rupture of a storage tank by the ignition of AN vapours inside the tank during filling. This ruptured the tank and resulted in a fire that was extinguished within one hour. No injuries were reported. The storage tank at Kaipiainen was an atmospheric pressure tank, the headspace above the liquid in the tank was full of air, containing the oxygen required to ignite the AN in the tank. Current best practise for the storage of flammable liquids is to eliminate the air (and therefore the oxygen) from the headspace of storage tanks by the use of a nitrogen purge. The headspace to the AN storage tanks on the CFP plant will be nitrogen purged, eliminating the possibility of this type of accident occurring at Duxford by removing the oxygen.
- 3.8.4 The AN incidents in Alabama, US in 1994, the incident in Amersfoort, Holland, in 2002, and the lightning strike in Brazil in 1992 are considered by Hexcel to be the only incidents potentially relevant to the proposed CFP plant. All other incidents have involved either AN transportation or processing methods not relevant to the CFP process at Duxford such as sea transportation, and/or the use of AN in a different process. In Alabama, the tanker driver fell asleep at the wheel, losing control and overturning the AN tanker he was driving. 3 kilogrammes of AN were released out of a total cargo of 18.6 tonnes. The only injuries in this incident were the crash injuries to the driver. The Amersfoort Incident was caused by a scaffolding pole puncturing a rail tanker of AN, leading to the spillage of an unknown quantity of AN. People living/present within the close proximity of the train were evacuated as a precaution, and although seven people (all of them emergency responders to the incident) were treated for eye/nose irritation, no members of the public were affected. The lightning strike on an AN tank in Brazil resulted in a fire that destroyed one of two storage tanks. A lightning strike would be highly unlikely at Duxford due to the low height of the AN storage tanks and the proximity to taller structures; lightning strike protection will be considered as part of the overall detailed AN tank engineering design.
- 3.8.5 **Importantly, none of the incidents mentioned above has led to the death of a person or any significant environmental incident.**

Summary of Acrylonitrile Incidents 1991-2006

Ref	Incident Date	Location	Type of Incident	Casualties	Incident Summary	Primary
(1)	13 September, 2002	Kaipiainen, Finland Chemical Plant Storage facility	Explosion, Fire	None	On a plant site, Acrylonitrile was being transferred from a tank wagon through a fixed piping to a 100m ³ storage tank. The work had been going on for almost two hours (24 tonnes transferred) when suddenly a very loud bang was heard and the upper end of the storage tank was blown about 70 metres, beyond the plant site fence. In the explosion, the 11 metre high tank with a diameter of 3.34 metres remained in its upright position.	Ignition of a flammable atmosphere within the Acrylonitrile tank headspace during tank filling.

Ref	Incident Date	Location	Type of Incident	Casualties	Incident Summary	Primary
(2)	20 August, 2002	Amersfoort, Holland Train Transporting Acrylonitrile	Chemical Leak	7 persons (Emergency responders) treated for eye/nose irritation	Police and fire department officials evacuated parts of the town after a train carrying 70,000 litres of Acrylonitrile started leaking. The leak was found during a routine check. It was unclear how much Acrylonitrile had leaked or how many people were evacuated. The Amersfoort Fire Commissioner told a news conference the chemicals had been improperly manufactured and did not contain an important stabilizer.	Loss of containment caused by scaffolding pole puncturing rail tanker.
(3)	17 October, 1996	Off Matsuyama, Japan	Transport Incident	None	The Formosa Eight Chemical tanker grounded carrying 32,000 tonnes of Acrylonitrile. Extensive damage to port side of ship but no pollution. Tanker refloated.	Navigation error.
(4)	7 February, 1994	Birmingham, Alabama	Tanker leak (1 gallon)	Crash injuries only to driver	On 7 February on Interstate 65, 20 miles North of Birmingham, Alabama a tanker driver fell asleep at the wheel, crashing and overturning his Acrylonitrile tanker. The tanker was carrying 6,000 gallons of Acrylonitrile, however, only 1 gallon leaked out.	Driver error.
(5)	1992	Santos, Brazil	Fire	Unknown	Lightning Strike on Acrylonitrile storage tanks (2 tanks, 1 tank destroyed).	Lightning strike
(6)	21 August, 1991	Coode Island, Melbourn Australia	Chemical Leak, Fire and Explosion	No serious injuries	At 2.15pm on 21 st August, 1991, a tank exploded at Coode island, followed shortly afterwards by another two tanks. A large fire erupted, after a 600,000 litre chemical storage tank full of Acrylonitrile exploded. The fire was brought under control about 5pm that day.	Arson.
(7)	March 17, 1991	Yokkaichi, Mie, Japan Chemical Production facility	Explosion, Fire	2 persons serious injuries	At a cyanonorborene manufacturing plant, a dicyclopentadiene and Acrylonitrile mixture was reacted by heating with agitation in a reactor. However, agitation became insufficient due to the excessive quantity charged. Due to the accumulation of reaction heat, there was a runaway reaction, reactor pressure rose, the weakest part of the reactor at the shoulder cracked within a few minutes, vapour generated a vapour explosion, and the dispersed liquid ignited.	Addition, runaway reaction due to excessive charging quantity of Acrylonitrile.
(8)	1 February, 1991	Molfetta, Italy	Leak (contained)	None	The chemical tanker the Alessandro Primo sank in the Adriatic Sea, some 30km from Molfetta (Italy) with her cargo of 3,013 tonnes of 1.2 dichloroethane and 549 tonnes of Acrylonitrile. A rupture in an Acrylonitrile pipeline was sealed using epoxy resin.	Damage to ship's hull.

4.0 Environmental Issues

4.1 Traffic

- 4.1.1 The Environmental Statement sets out a comprehensive assessment for the likely traffic effects arising from both the construction and the operation of the CFP plant. Construction traffic will approach the site from the M11/A505

using Hunts Road/Ickleton Road through Duxford. There is no suitable or viable route passing through Hinxton. The routing of heavy construction traffic will be enforced rigorously by the managing construction contractor.

- 4.1.2 The route through Duxford is within a 30mph speed limit, enforced by a chicane and speed humps through the village. Two AN tankers per day will be required to supply the CFP plant. Two tankers per day passing through with the use of specialised tankers/driver, and the avoidance of peak times, especially in respect of the school day, would ensure that risk was minimised. AN tankers will be required to pass the school but at that point will be travelling at around 10-15mph due to the speed reduction chicane approaching Duxford on Hunts Road.
- 4.1.3 The AN suppliers preferred method of transportation is by specialised road tanker. **AN transportation is not banned from cities or built up areas.** The tankers used to transport AN are specially designed for the transport of such liquids. The tankers are of approved design and are top filling/unloading; there are no valves or openings below the liquid level. The tanker drivers used to transport AN are full trained HazChem drivers. The tankers are built to the industry standard T14. A number of representations have contended that AN is a 'Cargo of Particular Hazard'. This statement is a reference to the transport classification of AN, or more specifically the bulk transportation of Acrylonitrile by sea. 'Cargoes of particular Hazard' are defined in section 126.10 of Title 33 of the Code of Federal Regulations (United States Federal Law) and relate to navigable waterways and harbour facilities. The phrase has no relevance to the road transportation of AN to the CFP plant site.
- 4.1.4 As stated, the Highways Authority has yet to express a view on the application.

4.2 **Water Disposal**

4.2.1 Surface Water Disposal

All surface water run-off from the existing Hexcel and Huntsman sites is attenuated through a system of large buffer tanks and a surface water lagoon. This system allows the controlled release of surface water into the River Cam, reducing the risk of flooding. As a consequence of the proposed CFP plant development, the effective volume of the surface water storage on-site will require to be increased by ca 150m³ (in accordance with the recommendation in the flood risk report by Mott MacDonald) to allow for the increased area of hard surfacing on the site. There will therefore be no additional surface water disposal into the River Cam than occurs at present, thus meeting the requirements of the EA. The EA will define levels of water quality for surface water disposal. The leakage prevention measures built into the production systems will ensure that there are multiple layers of protection all of which would have to fail. In any event, all new storage tanks will be fully bunded and the contaminated drainage system already present on the site would be used to collect liquid effluent from the site for treatment before being released into the River Cam.

4.2.2 Foul water treatment

Foul water from the existing Hexcel and Huntsman sites is treated at an existing treatment plan owned and operated by Huntsman, but to which

Hexcel has rights of use. This plant has dealt successfully with all liquid effluents from the Duxford site operations for over 50 years, although the plant has been progressively maintained and improved throughout its life. No problems are anticipated with the effluent streams from the CFP process, and water quality for water disposal.

4.3 Flood Risk

4.3.1 Published EA 1 in 200-year flood risk maps for the Duxford area (and as contained in the SCDC Local Plan and emerging Local Development Framework) show part of the site within an area of flood risk. These maps are inevitably general in nature. As part of the EIA, a flood risk assessment was undertaken, which concluded that a 1 in 200 year flood event would not lead to any significant flooding of the site. All of the CFP plant storage tanks and buildings will be above the required flood level to ensure that in the event of a flood event no floodwater will enter any part of the process area. The EA has been consulted as part of the planning process in respect of flood issues but has raised no objection in respect of flooding issues. As a further precaution measures will be employed so that in the unlikely event of pollution being detected in the surface water drain the flow will be diverted to the contaminated water storage tanks. The landscape bunding around the site will have no impact on the flood risk as it is a permeable structure and thus does not increase the rainwater catchment area of the River Cam.

4.4 Gas Pumping Station

4.4.1 An AN fire scenario has been considered and the thermal flux from a fire calculated. The thermal flux threshold below which damage is unlikely to occur is a maximum of 20 metres from the storage tanks. The CFP plant layout has been designed to take this into account. The gas pumping station is some 300 metres from the Hexcel site and so would not be affected in any way. In any event, Transco, the operator, has raised no representation in respect of this issue.

4.5 Landscape and Visual effects

4.5.1 The EIA contained a detailed assessment of local landscape character, site visibility and of the nature and effects of change that would be brought about by the proposed development. As a general statement, the EIA concluded that the CFP plant buildings would be seen in the context of the existing industrial site, and thus constitute limited change and hence impact in visual terms. The application is at this stage an outline application, and by appropriate conditions, SCDC would require the detailed form, materials and colour of the building exteriors to be carried out in an acceptable manner to ensure that the visual impact of the CFP plant is minimised. The only available views are from the south west, south, south east and east, and in the majority of these, the proposed development would be seen against the backdrop of the existing Hexcel site. In addition, new landscaping including earth mounding and the planting of additional trees around the site boundary would reduce/minimise the views available from local viewpoints. Hexcel has noted the objections made to the intended removal of the trees to the south of the site and has now brought forward changes to the proposals so that none of these trees will be removed. Opportunities to plant additional trees will be taken, increasing screening towards Hinxton village and benefiting local

wildlife. Detail design of the landscape works will be carried out in full consultation with SCDC.

4.6 **Effect on wildlife**

- 4.6.1 Wildlife interests in waterways adjacent to the site would be protected by the surface water discharge restrictions set by the EA. The additional landscaping will also afford some new wildlife protection.
- 4.6.2 Thriplow Peat Holes, a Site of Special Scientific Interest (SSSI), are located approximately 3 miles North West of the Hexcel site. Hexcel do not believe that there will be any impact on this SSSI as a result of local water abstraction at Duxford. The water abstraction volume required for the CFP plant is below the current permitted water abstraction licence limit, and there are no plans to increase the water abstraction licence for the site.

4.7 **Effects on air quality**

- 4.7.1 The local air quality in Duxford, Hinxton and Ickleton is closely linked to the proximity of the settlements to the M11 and the large population centre of Cambridge. The existing operations carried out on the Hexcel site do not have a significant effect on the local air quality. The background Nitrogen oxides (No_x) concentration in the local area is around 40µg/m³, the total Hexcel site (including the CFP plant) will contribute only 1µg/m³ to this at the site boundary. This is fully explained within the EIA. Dispersion modelling of the CFP process emissions carried out shows the relationship between the M11, Cambridge and the No_x air concentration. The proposed development would not have any tangible effect on air quality.

4.8 **Local Planning Policy**

- 4.8.1 As acknowledged fully in the EIA, whilst a significant part of the allocation site lies within the existing Hexcel operational site, and thus within an area identified as an existing employment area in the adopted South Cambridgeshire Local Plan, part of the site lies outwith this area, within a designation of 'countryside'. As part of the emerging Local Development Framework (LDF) for South Cambridgeshire, Hexcel have made representations that the area of the existing employment sites should be enlarged to (a) recognise the full extent of their operational site and (b) include all of the land required for the operation of the CFP plant. Hexcel have pursued these representations throughout the LDF process and the Inspectors' report in response to their representations is awaited. It is common ground between Hexcel and SCDC, in the event that the Inspectors do not accept Hexcel's argument, that such a conclusion would not automatically render the application proposals unacceptable, for whilst the LDF would thus suggest that planning permission should not be granted, the District Council would require to take into account 'other material considerations' in respect of the of the proposals before reaching a conclusion. Such considerations might, for example, include the employment that the development would provide, in its own right, and the extent to which the development would maintain the existing employment levels at the Hexcel operation."

- 75. This additional information has led to a further letter from the Hinxton resident, and the letter together with a response from the Applicants is included in Appendix 1.

76. The Applicants have also submitted further information on site car parking implications, a Travel to Work Plan, and a Traffic Information Pack, following discussions with the County Transportation Department.

Planning Comments - Key Issues

1. *Planning Policy and the Proposed Site Area*

77. The existing Hexcel/Huntsman site (formerly Ciba-Geigy) is defined as an Established Employment Area in the Countryside in Policy ET4 of the Local Development Framework (Development Control Policies). The application sites fall partly outside the southern boundary of the area defined on the Proposals Map, agreed by the L.D.F. Inspector after considering representations from the Applicant. Appendix 2 shows the L.D.F. boundary of the Established Employment Area and the amended applications site boundary.
78. The application is therefore a Departure from the Development Plan and will have to be referred to the Secretary of State if Members are minded to approve it. There are several factors which lead me to the view that the application should not be rejected on this ground.
79. First, I consider a strong case has been made for the construction of a carbon fibre precursor plant at Duxford, an established chemical works with the necessary technical expertise. The Applicants have looked at all their European plants and concluded this is the only appropriate location to establish a European base for the process, particularly vital for the development of the Airbus project. Support has been forthcoming from the Department of Trade and Industry, East of England International (UK Trade and Investment) and the East of England Development Agency, stressing the importance of the proposal to the national and local economy and the future of the composites industry.

Secondly, the development would create about 100 permanent jobs, and ensure the future of the Hexcel plant, already a major employer in the region.

Thirdly, the land in question outside the defined boundary of the site does include some hardstanding associated with the existing railway sidings, which are to be retained. Also part of the area is needed as a construction compound and will be returned to agriculture once the development is completed in approximately 3 years from commencement.

Fourthly, there is a 10 year old belt of trees along the southern boundary of the proposed developed part of the site which forms a natural break with the surrounding countryside. If the development proceeds this will be supplemented on its south side by a substantial planted mound, reinforcing the separation.

2. *Health and Safety Issues*

80. Members will see from the Consultations and Representations received that this has been the primary concern of the local community, and the Applicants have endeavoured to allay fears on the detailed points raised. (See "Further Information from the Applicants [5th June 2007]"). Every industrial process has a potential and residual risk, and the toxicological profiles of the chemicals involved in this case are well documented. The key issue is whether the equipment and procedures proposed will result in safe usage. The Applicant's operations, both current and proposed, can only be undertaken with the full approval of the regulatory agencies - primarily the

Health and Safety Executive and the Environment Agency. With these applications, no objections have been raised by either agency, subject to conditions being attached to any permission granted.

81. Planning Policy Statement 23 "Planning and Pollution Control" advises local authorities that "any consideration of the quality of land, air or water and potential impacts arising from development, possibly leading to an impact on health, is capable of being a material planning consideration, in so far as it arises or may arise from any land use". It also notes that "the planning system should focus on whether the development itself is an acceptable use of land, and the impacts of those uses, rather than the control of processes or emissions themselves. Planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced. They should act to complement but not seek to duplicate it." Having consulted the relevant regulatory agencies and received a positive response there are no grounds to refuse the application on health and safety grounds.

3. Impact of the Buildings and Plant on Duxford, Hinxton and the Countryside

82. Established in the late 1930s, the industrial site has expanded over the years into a major complex abutting the southern side of Duxford. The buildings and plant now proposed would form a southern extension to the site away from the village and will be largely screened by the existing developed site.
83. Hinxton is about 0.75km to the south east and the proposed development will be visible, albeit at a distance and against the backdrop and as part of the existing works. The two tallest buildings (29m high) have relatively small footprints and have been sited as far from Hinxton as possible, but will be the most prominent structures. Given the current outlook from Hinxton of the site I do not consider the change would be so significant as to warrant refusal.
84. The amended scheme has less impact on the countryside with the retention of the trees on the southern boundary and the extensive supplementary planting on the mounding proposed in the field to the south. Obviously it will never be possible to screen the proposed buildings completely from the surrounding countryside, but the views of the site will be filtered and softened, as has happened with planting on other boundaries of the site.

4. Traffic Impact

85. The impact of construction traffic has been of particular concern to Duxford Parish Council, and the adverse effect upon safety at the morning and evening peaks and school drop off/pick up times. The School Governors share these concerns and also raise the issue of safety with regards to passing chemical tankers once the site is operational. A number of local residents, both in Duxford and Hinxton, question the wisdom of transporting hazardous chemicals from the north-east of England to the site by road.
86. The Local Highway Authority, having requested further information on existing and proposed vehicle movements from the Applicants, require conditions which seek to ensure construction traffic is outside peak travel times and HGV movements avoid school drop off/pick up peaks.
87. The Applicants have stated there will be 2 tankers carrying Acrylonitrile per day and this has been conditioned by the Health and Safety Executive. The route through Duxford is within a 30mph speed limit, enforced by a chicane and speed humps

through the village. It is estimated by the Applicant that the tankers would be travelling at around 10-15mph adjacent the school because of the speed reduction chicane.

88. The use of tankers as opposed to rail transport is because the supplier of the chemical uses this means of transportation. The rail sidings at the Applicant's site are to be retained for possible future use, but it is likely road tankers will be used for the foreseeable future. The tankers are purpose-built for this type of chemical and driven by specialist drivers. The applicants have stated the risk of a catastrophic road transport incident with the chemical is minimal, with one reported accident in 20 years worldwide resulting in no significant spill.

Recommendation

89. Members to indicate that they are minded to approve the outline planning application, amended on 15th June 2007, which will have to be referred to the Secretary of State as a Departure from the Development Plan. In the event that the Secretary of State does not call the application in for her decision, the following matters be included in the conditions of approval:

1. S/1749/06/O - Carbon Fibre Precursor Plant

1. Standard Condition B - Time limited permission (3 years).
2. Standard Condition 1 - Reserved Matters:
 1. Appearance
 2. Landscaping
 3. Layout
 4. Scale
3. Construction traffic outside network peaks only (07.45-09.00 and 16.30-17.45).
4. H.G.V. movements, during and after construction, outside school drop-off and pick-up times and evening network peak (08.00-09.00, 15.00-16.00, and 16.30-17.45).
5. Maximum number of Acrylonitrile deliveries - 654 per year.
6. Travel Plan to control traffic levels generated by the development, including details of targets, monitoring and enforcement.
7. Should the Travel Plan targets referred to in Condition 6 above not be met, no occupation of buildings and site shall occur until an upgrade for the A505/Hunts Road roundabout is agreed up to a Stage 1 Safety Audit including capacity analysis.
8. Ecological Management Plan.
9. No removal of trees during bird nesting season unless otherwise agreed.
10. Reinstatement of contractor's storage yard.
11. External lighting.
12. Water Conservation Strategy.

13. Waste Minimisation Strategy.

14. Renewable Energy Strategy.

15. Public Art

16. Contamination Survey.

+ possible contribution to proposed Duxford-Ickleton cycleway (S106 Agreement)

Informatives

Comments of Environment Agency, County Footpaths, Environmental Health, Landscape Design Officer, Ecologist and Reasons for Approval.

2. S/1703/06/HSC - Storage of Acrylonitrile

This application should not be determined pending the decision of the Secretary of State whether to call in for her decision the outline planning application, reference S/1749/06/O. In the event that it is not called in, the Hazardous Substance Consent application be approved, amended on 15th June 2007, subject to the following conditions:

1. The hazardous substances shall not be kept or used other than in accordance with the application particulars provided in the Hazardous Substances Consent Application Form, nor outside the areas marked for storage of the substances on the amended plan franked 15th June 2007, which formed part of the application.
2. The maximum number of deliveries of Acrylonitrile will be limited to 654 per year.

Informatives

Comments of the Environment Agency and the Health and Safety Executive.

Background Papers: the following background papers were used in the preparation of this report:

- South Cambridgeshire Local Development Framework (Development Control Policies) adopted January 2007
- Cambridgeshire and Peterborough Structure Plan 2003
- Planning File Ref: S/1749/06/O, S/1703/06/HSC
- Documents referred to in the report including appendices

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Extract from Letter from Hinxtion Resident dated 26th October 2007 and Reply from Applicants dated 13th November 2007

Hinxton Resident

"References follow the numbering in the Hexcel document.

- 1.3 Please note that HSE has refused to disclose safety data on vinyl cyanide on the grounds of national security.
- 1.4. Hexcel confirm that risk cannot be eliminated; only controlled by regulatory systems and management. Please note, most accidents occur when these systems are ignored by operators. Please see 3.8.4 in the Hexcel document which confirms human error as the cause of the Alabama spillage. Please note also the recent \$150 million fine imposed on BP for ignoring US corporate safety guidelines despite written control process, accidents do happen. The only way of removing the risk of an accident would be to site the facility well away from populated areas as recommended by the WHO guidelines.
- 1.5 Hexcel have provided no information on the environmental impact of 100 additional employees driving to the site or of hundreds of additional road tankers travelling between the production site of vinyl cyanide and Duxford.
- 1.7 Notes that carbon fibre is lighter and stronger than metal and this could provide benefits in the aviation industry. Although that fact is not disputed, Hexcel has provided no information on the overall carbon foot print of their proposed process. This needs to include the manufacturing phase, production and transportation of additional quantities of vinyl cyanide, transportation of the finished carbon fibre to the wing assembly site, and the transportation of the wing assembly to the aircraft final assembly site. Only when all this information has been provided can a judgement be made as to whether the entire process is beneficial to the environment. In addition, recent reports suggest that modern fuel-efficient transportation may not be as beneficial to the environment as previously thought when the manufacturing impact is included. For example, the dust to dust carbon footprint of a Land Rover is less than that of a Toyota Prius hybrid car, primarily due to the fact that the Land Rover design has remained largely unchanged since 1948 and therefore the lack of new tooling costs more than negates the lower fuel efficiency.
- 2.1 The economic case Hexcel state is purely the economic benefit to the Company which is US owned. There is no economic case in favour of Duxford, South Cambs or the UK as all profits will go to the US parent company.
- 2.3 Hexcel states that it does not have suitable sites in other countries. From an environmental and EU economic perspective, the ideal site would be within an existing, secure and remote vinyl cyanide production facility or a new plant close to the Airbus final assembly plant in Toulouse, France.
- 2.4 It is not part of the Eastern Region Strategic Plan to generate additional manufacturing jobs as the Region effectively already has full employment. In addition, as Hexcel admit, the necessary skills would not be available locally and the 100 new jobs would add to the regional transport difficulties and increase pollution.

- 3.2 This section concentrates primarily on the manufacture of vinyl cyanide. WHO reports note that the biggest hazards occur in the use of vinyl cyanide in other production processes rather than in the production of the raw ingredient itself. This section is therefore misleading, as the proposed plant at Duxford will not manufacture vinyl cyanide.
- 3.2.3 Is misleading. Latest reports indicate that vinyl cyanide is a known carcinogen. Comparing exposure to benzene when re-fuelling cars is misleading. Accident reports show that the biggest risk of spillage is during road transportation, not during manufacturing processes at the static site. The effects of a significant tanker spillage on a major trunk road such as the A14 would be catastrophic.
- 3.2.4 Again only discusses the low levels of exposure to vinyl cyanide to plant operatives. It does not consider the most likely scenario, spillage during transportation where exposure limits could easily be exceeded. PLEASE NOTE, HSE HAS REFUSED TO PROVIDE THIS INFORMATION ON THE GROUNDS OF NATIONAL SECURITY. Road tankers would contain 25 tonnes of vinyl cyanide whereas the UK 8 hour exposure limit is set at 2 parts per million.
- 3.2.5 Is incorrect. The most recent studies, including the current ICSC data sheet for vinyl cyanide state that the substance is carcinogenic and teratogenic. Of more importance is the fact that cyanide gas could result from an explosion. This is fatal.
- 3.2.6 Please note that the ICSC report on carcinogenicity post-dates the report Hexcel refer to. The latest reports conclude that vinyl cyanide is carcinogenic.
- 3.2.8 Is incorrect. Vinyl cyanide is teratogenic (causes birth defects).
- 3.2.9 This is misleading. Again Hexcel is referring to the low levels of exposure on site and not the potential acute toxicity threat of a spillage during transportation.
- 3.3.2 and 3.3.3
Are misleading. The Buncefield event proves that, despite the best intentions of companies, and despite the best safety devices, human error can and does cause catastrophic failures.
- 3.4.1 and 3.4.2
Are misleading. Hexcel focus entirely on the catastrophic failure of a storage tank. As noted above, HSE has refused to provide data on this, however, the biggest risk of exposure would be during road transportation and in those circumstances, the containment measures proposed for the manufacturing site would not be available.
- 3.6.1 Is misleading. Although the risk from the normal use of vinyl cyanide may be assumed to be low, the risk of a catastrophic release during transportation is high.
- 3.6.2 Again Hexcel is quoting out dated information.
- 3.6.3 Again Hexcel is quoting out dated information.
- 3.7.1 It is vital that the Highways Authority fully reviews the risks during transportation. Hexcel provide no information on the frequency of road tanker accidents in the region, particularly on the A14.
- 3.8.3 Is misleading. The rupture of the storage tank in Finland caused no injuries precisely because it was located away from populated areas.

Conclusions:

- Hexcel have failed to address the adverse environmental consequences of their proposal.
- Hexcel's risk assessment focuses entirely on the production site and staff and ignores the long-term risk to residents and the acute risk during transportation.
- Hexcel use out-of date product safety data.
- Hexcel accept that, despite the best maintained plants, accidents do happen.
- HSE has refused to provide data concerning the effects of a catastrophic spillage.
- No assessment has been made on the impact of additional road transportation.

Until SCDS has full and impartial disclosure on all the factors involved, it would be impossible to make an informed decision.”

Applicant's Response

“Many of the comments you have forwarded to us concentrate on transportation hazards. In the last 20 years there has been only one road incident with Acrylonitrile (AN) worthy of reporting worldwide. In that incident in Alabama, there was no significant spill of AN. This illustrates how safe this mode of transport is, with its specifically trained drivers and specially constructed tanks, more so today than ever.

The second point is to separate acute and chronic hazards. In a single incident like a major spill, the risk is acute, so the industry seeks to prevent major exposures, which could lead to asphyxia and similar. The chronic risk of low level exposure could possibly give rise to cancer, asthma or other illnesses. We believe, from the long term studies, that it is clear that AN will not give rise to such illnesses. The epidemiological studies made over 40 years have not been invalidated and there are no reports of recent studies coming to any other conclusion. The International Chemical Safety Card (ICSC) documents are only related to a data sheet, not a report of any studies, for AN it contains the designation “confirmed animal carcinogen with unknown relevance to humans”.

Specific points below refer to the numbering in our document “Further Information on behalf of the Applicants”:

- 1.3 We can make no comment on the willingness or otherwise of the HSE to release information.
- 1.4 Risk cannot be eliminated, but it can be reduced to insignificance, which is the purpose of HAZOP (Hazard and Operability) studies. These are used to evaluate any new plant that we install. The categorisation of risk by probability and consequence is complex and Hexcel follows international guidelines and standards in identifying and mitigating hazards in each case. Typically several hundred potential causes and consequences are identified in a programme of work lasting for months for a project of this size. Specific comment on the Alabama incident is made above.

- 1.5 The initial input from the Highways Agency has been submitted to you and refers mainly to the congestion and general traffic risks, not the specific risk of AN transportation.
- 1.7 The full environmental impact of a product involves life cycle analysis. The total impact of 1 kilogram of our material on an aircraft, from the moment where it is pumped from an oil well has been calculated as equivalent to above 40 litres of jet fuel (the calculation is from Hexcel proprietary data relating to plant energy uses and efficiencies). Generally 1kg of our material replaces 2kg of metal. During the life of an aircraft, 1kg of weight savings is worth thousands of litres of jet fuel.
- 2.1 Hexcel Composites Ltd is a UK company paying UK taxes, buying materials in the UK and employing people in South Cambs producing material which is regarded as of strategic importance by the aerospace industry and key government bodies. It is self-evident that we contribute considerably to the local and national economy.
- 2.3 Hexcel does not have suitable sites in other EU countries. We specifically need to supply Airbus from the EU. We prefer not to build on a green field site as we would be very unlikely to have the local expertise we have in Duxford and we would lose the economies in repeating infrastructure.
- 2.4 The new jobs created will be direct production workers and skilled workers who are available locally.
- 3.2 This section in our previous letter concentrated on the properties of AN whether manufactured or used in other processes. It illustrates the factors we have taken into account in our preliminary design and which we will elaborate on in our final detailed design. This section addresses long term exposure to low levels of AN (the chronic effects), except in 3.2.9 where we address short term acute (high levels of) exposure.
- 3.2.3 Our comment on benzene is to indicate the levels of exposure to a proven human carcinogen that people readily accept in their daily lives, as opposed to the routine levels of exposure to a possible carcinogen which our workers would be exposed to and the levels any person offsite would be exposed to. This was an attempt to place the risk of our plant in perspective and compare it against a risk nearly all of us choose to ignore or accept. The relevant extract of the ICSC sheet on benzene is appended for comparison with the AN sheet.

3.2.4,5,6

We have found no report that identifies AN as a carcinogen in man. The categorisation as a 'possible human carcinogen' is based on animal studies, which have value when there is no direct human data available. However, in the case of AN, there are direct and long term studies of the actual levels of mortality in workers, who must have the greatest exposure and therefore highest risk of developing cancers and NO excess occurrence of cancer was found in the 34,000 people over a period of up to 40 years. While detection and modelling skills have developed dramatically over this time, the data from these very large studies is not invalidated by any later work. In fact we would have expected any problem to have shown up more in these early plants that were not as well built and tightly controlled as today's. In contrast, similar epidemiological studies on other materials in the past 30 years have shown carcinogenic effects in humans within a few years, so the methodology is clearly effective.

Routine exposures outside the plant will be 500 times lower than the current best practice levels for 40 years of 8 hours a day 5 days a week exposure of

operators, and another 10 times lower than the action level for AN under HSE rules for plant operators. The plant operator exposures are again much lower than those that have been shown over many years not to lead to cancer or other long term effects. This is the basis of our statement that there is no long term low-level exposure risk to any of our neighbours.

An extract from the current ICSC data sheet is appended. You will see that it clearly states that AN is not a proven human carcinogen. We again note that epidemiological studies are the surest way to identify carcinogens in man and no effect has been found in the very large studies over many years. Additionally, this ICSC data sheet is just that, not a report of any scientific study. We note that the sheet dates from March 2001 and we have found no significant reports after that date.

3.2.8 Your correspondent makes an apparently unsupported statement. In the published studies and specifically the Hungarian WHO report, referred to in our previous document, there is no evidence of birth defects from AN exposure.

3.2.9 As noted elsewhere, in 20 years of much less regulated operations worldwide there has been no deaths from AN and in the only reported transport incident there was only a minimal spill and no consequences to people from AN.

3.3.2 and 3.3.3

Are not attempts to mislead but precise statements of how we will avoid significant incidents on site.

3.4.1 and 3.4.2

Deal with the potential hazards arising from the storage and use of AN on site. As regards road transport we will always contract with major suppliers whose record has so far been exemplary.

3.6.1 This is not supported. The risk of a catastrophic road transport incident is minimal - 1 reported accident in 20 years worldwide, with no serious effects. The excellent design and operation of tank trucks shows how safe this is.

3.6.2 **At risk of gross repetitiveness the studies we have relied on for our assessment of risk, being epidemiological, are not outdated. The insistence of representing AN as a mutagen/carcinogen in humans, based on animal results, may be understandable if there were no epidemiological data. But there is and it shows no effect. Even the ICRC data sheet recognises the lack of evidence of human carcinogenicity. Our reading of the data would go further than this and recognise that there is evidence of no carcinogenic effect in plant workers, the most heavily exposed group.**

3.6.3 **We have reported the latest data we have found. The correspondence we have seen has offered no references, only unsupported assertions.**

3.7.1 You are aware of the Highways Agency responsibility regarding any appropriate recommendations concerning congestion and traffic safety.

3.8.5 The location of the Kaipainen plant is on the edge of a small town. A very similar location to that of the existing Hexcel plant to Duxford. The key point with regard to the incident is that no employees, who will always be in the "front line", sustained injuries let alone any one else.

Extracts from International Chemical Safety Cards

Acrylonitrile

OCCUPATIONAL EXPOSURE LIMITS:

TLV: 2 ppm as TWA (skin) A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004).

MAK: skin absorption (H); sensitization of skin (Sh);

Carcinogen category: 2;
(DFG 2004)

OSHA PEL: 1910.1045 TWA 2 ppm C 10 ppm 15-minute skin

NIOSH REL; Ca TWA 1 ppm C10 ppm 15-minute skin

NIOSH IDLH: Ca 85 ppm See: [107131](#)

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

Repeated or prolonged contact may cause skin sensitization. The substance may have effects on the central nervous system liver. This substance is possibly carcinogenic to humans.

Benzene

OCCUPATIONAL EXPOSURE LIMITS:

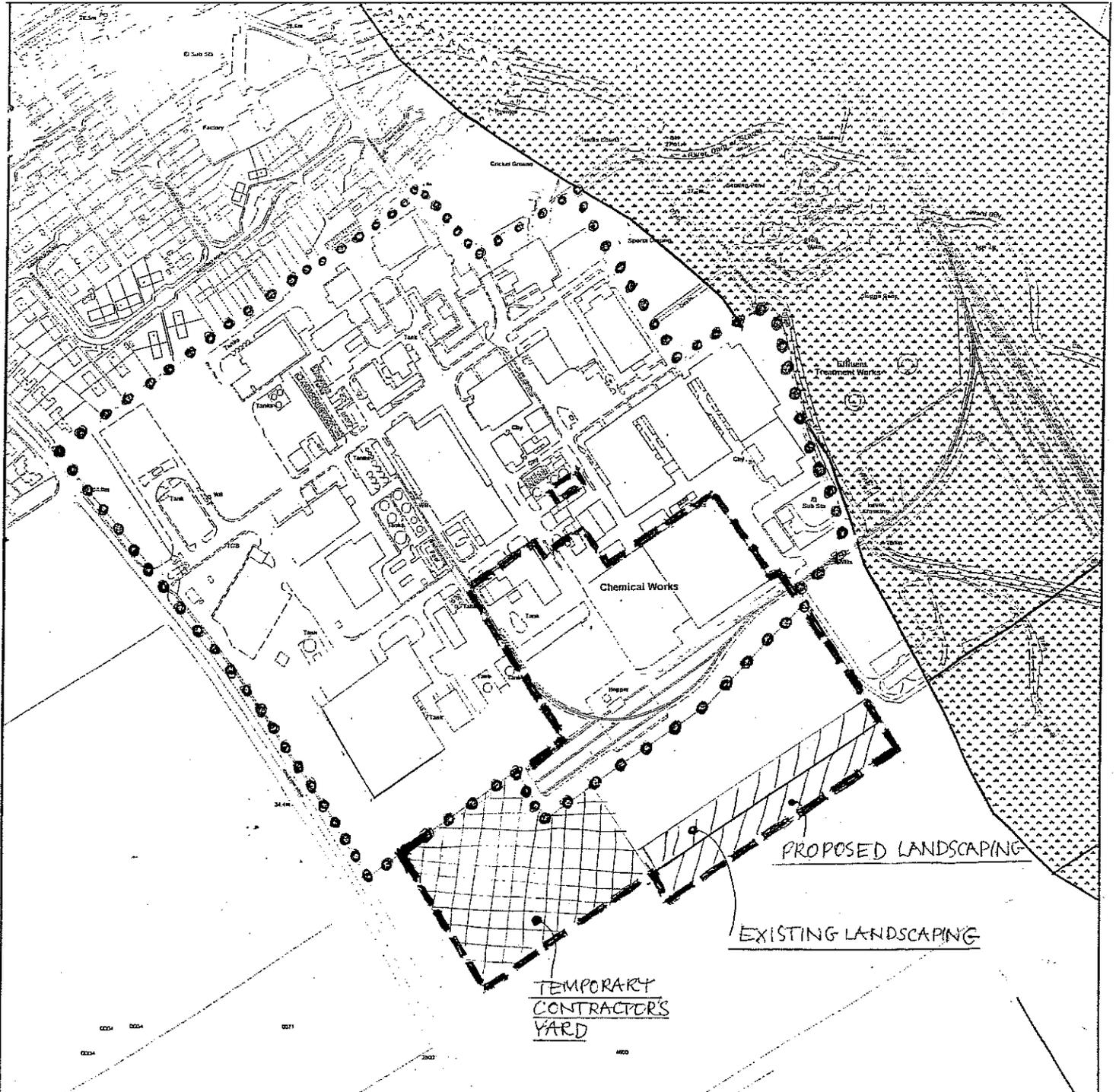
TLV: 0.5ppm as TWA; 2.5 ppm as STEL; (skin); A1; BEI issued; (ACGIH 2004).

MAK: H; Carcinogen category: 1: Germ cell mutagen group: 3A; (DFG 2004).

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

The liquid defats the skin. The substance may have effects on the bone marrow and immune system, resulting in a decrease of blood cells. This substance is carcinogenic to humans".

Plan showing L.D.F. Boundary of the Established Employment Area and Application Site Boundary (as amended).



Key:

- ● ● LDF Boundary
- ■ ■ Application Boundary

Scale: 1:5000