Edinburgh, Scotland
EURONOISE 2009
October 26-28

Noise management for new UK deepwater container terminals

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1. INTRODUCTION

About 95% of the goods consumed or produced in the United Kingdom come and go by sea. In the year 2000, the UK government's policy on ports was encapsulated in the document "Modern Ports: A UK Policy". This recognised that ports serve the national interest, and that ports must succeed not only to meet the immediate demands of their customers but to invest in new facilities. With the increasing size of ships, the UK was getting left behind in the need for deepwater berths for container ships and its major ports were in danger of losing their "Gateway" status. In the early part of this decade, four proposals for new deepwater container terminals emerged. These were at Southampton (Dibden Bay), South Essex (London Gateway), Harwich (Bathside Bay) and Felixstowe (Felixstowe South). This paper describes how environmental noise issues associated with Bathside Bay and Felixstowe South were considered, and the noise management procedures which were derived for these developments. Of the two schemes, Felixstowe South is currently being constructed. A review is also given in this paper of the planning process that existed at the time of these applications and how this may change in England and Wales with the new Planning Act 2008.

2. DESCRIPTION OF THE CONTAINER TERMINALS

Both terminals were planned as deepwater ports with berthing depths of typically 16m below chart datum. Each terminal would be able to berth four of the largest container ships simultaneously. Bathside Bay would be served by eleven quayside cranes and Felixstowe South by thirteen quayside cranes. The handling capacity of container ports is described in TEUs (twenty foot equivalent units). This is based on the fact that containers are typically 20 feet (6m) or 40 feet (12m) long, so a 40 feet long container is 2 TEUs. The handling capacity of Bathside Bay was being designed at 1.68 million TEUs per annum and Felixstowe South as 1.96 million TEUs per annum. This implies 1.1 and 1.3 million containers handled per annum at the two terminals respectively, as the ratio of TEUs to actual containers is typically 1.5. Handling implies a movement of a container over the quayside i.e. either an import or an export.

Containers may be brought to a terminal by road (HGVs), rail (container trains) or ship (the latter is referred to as transhipment). The movement of containers around a terminal may be accomplished in different ways. Some terminals use straddle carriers, other use rail mounted gantry cranes, but both Bathside Bay and Felixstowe South were designed for rubber tyred gantry cranes (RTGs) working in combination with internal movement vehicles (IMVs – essentially tractor and trailer units). Bathside Bay was designed to have 44 RTGs and Felixstowe South 50 RTGs. An RTG typically sits across 7 rows of containers and

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these can be stacked up to 5 high. The Bathside Bay quay length will be 1400 m in length and Felixstowe South 1350 m. Both developments will be built and operated in phases.

The two container terminals are on opposite sides of Harwich Haven, in the east of England – see Figure 1. Harwich Haven is formed by the confluence of the Rivers Stour and Orwell and the North Sea. Both terminals are a similar size, with Felixstowe South having a slightly greater capacity than Bathside Bay. The major difference between the two schemes is that Felixstowe South is a reconfiguration and extension of an existing container terminal (Landguard) which itself forms part of the larger Port of Felixstowe, whilst Bathside Bay will involve the reclamation of a large bay area between the old town of Harwich and the existing Harwich International Port. This had major considerations when assessing the noise impact of the two schemes.

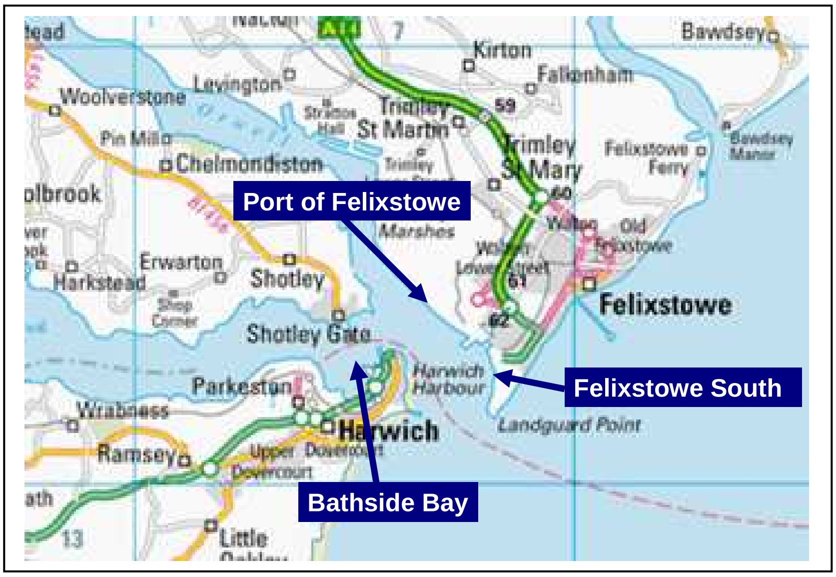


Figure 1: Location of Bathside Bay and Felixstowe South

3. NOISE SOURCES

Sources of noise at a container terminal may be continuous, quasi-continuous, intermittent or transient in nature. The actual noise sources include the quayside cranes (intermittent noise from the machinery house, the movement of the trolley and the hoisting of containers); RTGs (continuous noise from diesel engines, engine exhausts, and intermittent noise from trolleying and hoisting activity); quasi-continuous noise from HGV movements on internal roads around the terminal and tractors transferring containers on trailers to and from the container stacks; intermittent noise from specialised container handling vehicles called reach-stackers and top-lifts; quasi-continuous noise from refrigerated containers; intermittent noise from the movement of trains; continuous noise from ships at berth, transient noise from the handling of containers (impact noise); intermittent noise from the movement alarm systems on RTGs and quayside cranes. An understanding of the height of the noise sources is also important, with respect to sound propagation away from the container terminal in relation to the potential effects of screening and ground absorption. A quayside crane for example will have elevated noise sources typically 30 m above the quay.

In order to understand the typical noise source levels of container handling plant, a detailed noise audit was undertaken at the existing Port of Felixstowe. Whilst this provided useful information which allowed a base noise model of the existing terminals to be developed, it did not necessarily indicate the levels of noise that could be achieved from a new terminal if the management of noise emission was specifically addressed. For this, noise measurements were taken at other terminals where the issue of noise minimisation had been considered. For quietened quayside cranes, for example, a survey was undertaken at the Ceres Paragon terminal in Amsterdam. For these cranes, particular attention had been given to the reduction of machinery house noise through the use of double skin floor panels, vibration isolated walls, and acoustically lined ducts for air entry and cable entry. The major noise source then becomes the trolleying and hoisting mechanism, the former which is related to the smoothness of the rails, and whether the rails are vibration isolated from the rest of the crane structure. A quayside crane is driven by electric motors and, in general, only radiates noise to the environment when it is moving a box, or manoeuvring itself. A production rate of 30 boxes per hour per crane is reasonable, and a trolleying time of about 50 s per box is typical (2 way total).

Table 1: Typical container handling plant noise source emission levels

Noise Source	Modelling of Noise Source	Comments
Quayside Crane (upper source)	109 dB L_{wA} over operational cycle. May be modelled as area source to allow for movement of trolley and crane. Typical operating time 50 s for each box	Potentially achieve further 3 dB reduction if rails are isolated. Base sound power level assumes acoustically treated machinery house. Overall noise level results from combination of hoisting and trolleying. Empty containers are hoisted faster than laden containers, but radiated noise levels are greater. For laden containers, trolleying noise dominates.
Quayside Crane (lower source)	102 dB L_{wA} per side of crane. Movement time 20 s per move	Excludes movement alarm noise levels.
Rubber Tyred Gantry Crane	98 dB L_{wA} engine pod 81 dB L_{wA} engine exhaust	Effective acoustic enclosure with good airway attenuators. Double engine exhaust silencer assumed
IMV	108 – 111 dB L_{wA} when moving	Lower level represents specifically quietened tractor unit, verified noise levels.
Container handling impact noise (handling by Quayside Crane or RTG)	74 dB SEL at 40 m 74 dB SEL at 40 m 78 dB SEL at 40 m $L_{p\ Amax\ F}$ = SEL + 1 dB (typical)	Spreader onto container Container onto ground Container onto container Noise levels assume final creep speed limited to 4% of terminal velocity
Container ship	112 – 114 L_{wA} when berthed	Use of auxiliary engines for power; noise partly from on-deck refrigerated containers

A detailed audit was also taken of the noise emission from container impacts, and specific tests undertaken to identify the relation of speed of impact with radiated noise levels. In order to minimise noise radiation, final “creep speeds” just prior to impact need to be carefully controlled. This can be at conflict with the commercial requirement of maximising productivity.

Table 1 gives an indication of some typical noise source levels for container handling plant. It is considered that the quayside crane noise levels reflect typical operating situations and allow for some deterioration in the smoothness of the crane rails. It is possible that with a strict maintenance and rail grinding regime, lower noise levels might be achievable.

4. NOISE MODELLING

To predict noise levels to neighbouring communities a noise model was developed for each of the two new container terminals. A preliminary noise model had already been developed for the existing Port of Felixstowe, and this was found to give reasonably good correlation with measured off-site noise levels. Use was made of the noise modelling package CadnaA using the sound propagation algorithms of ISO 9613-2 (Acoustics – attenuation of sound during propagation outdoors – Part 2: General method of calculation). A decision had to be made on how to handle multiple in-plant reflections, particularly for noise sources such as IMVs and HGVs located between rows of containers. Some limited on-site testing was undertaken using an unsilenced tractor unit travelling between rows of containers to see whether multiple reflections would reduce theoretical barrier effects. The results suggested that this was the case, so an algorithm was developed based on simplified barrier theory and concepts of downwards sound refraction effects in meteorological conditions favourable for sound propagation using multiple source images, to derive approximate correction factors to be included as “overall attenuation values” in the noise model. The fact that these multiple reflections occurred was reinforced by subjective observations from the top of a quayside crane overlooking a container stacking area. Internal terminal roads were modelled as line sources, with sound power level values depending on the likely hourly distribution of IMV and HGV movements over the various roads.

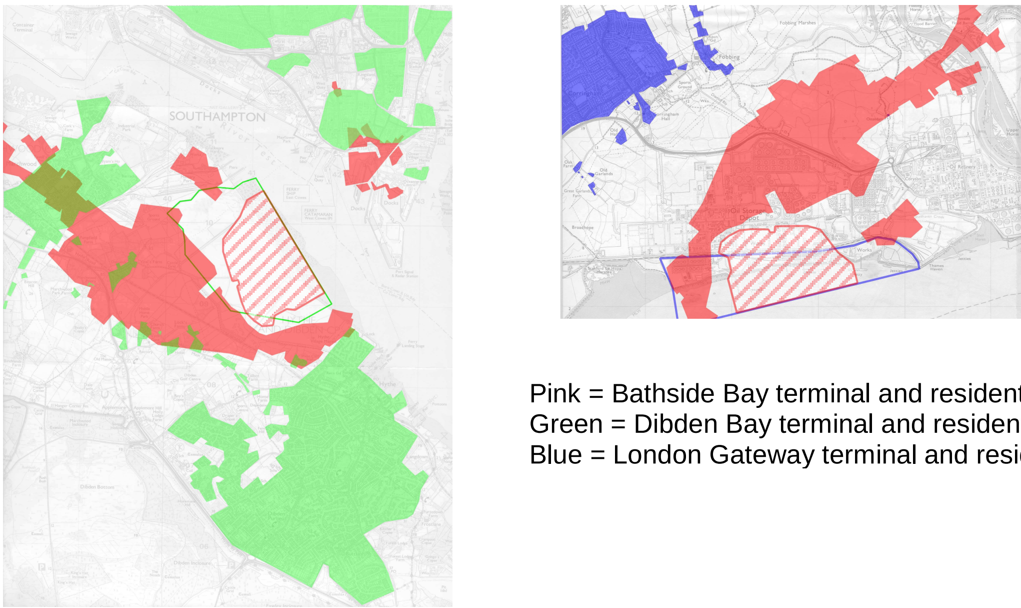
5. AMBIENT NOISE ENVIRONMENT

The potential impact of noise from the proposed terminals on neighbouring residential areas was an important consideration in the environmental assessment of each of the two projects. The noise assessments, which formed part of the overall Environmental Statements for the two schemes, included detailed ambient noise surveys over a period of several weeks at representative community locations in the vicinity of the two proposed developments. The old town of Harwich is, at its nearest point, some 1.5 km from Trinity Quay in the Port of Felxistowe, and about 2 km from the older Landguard Terminal. Harwich is west to south-west of the Port of Felixstowe. The Port of Felixstowe is a dominant source of noise as far as Harwich is concerned, particularly under easterly wind conditions. Night-time ambient noise levels of 51 dB L_{Aeq} and 49 dB L_{A90} are typical for a NE wind, with levels of 41 dB L_{Aeq} and 35 dB L_{A90} for a SW wind. Thus Harwich experiences swings of over 10 dB in ambient noise levels depending on wind direction. At the nearest residential location to the Port of Felixstowe, and in Felixstowe, night-time ambient noise levels at the time of the development proposals were typically 55 dB L_{Aeq} and 52 dB L_{A90}, with less variation due to wind direction. Baseline noise surveys were also undertaken along road and rail access routes to the two developments.

6. COMPARISON WITH OTHER SCHEMES

When the Bathside Bay scheme was first proposed, this was one of three UK schemes being put forward (the other two being Dibden Bay and London Gateway), with Dibden Bay the most advanced. Whilst each scheme would be assessed on its individual merits, Bureau Veritas (as noise consultants for the developer) undertook an exercise to compare the Bathside Bay scheme with the other two, with respect to noise. The purpose of this was to alert the developer to the fact that Bathside Bay was probably more vulnerable to operational and construction noise issues than the other two schemes which meant that greater consideration to noise mitigation might need to be given, if the scheme was to succeed. As the other two schemes were also of a similar size to Bathside Bay, the easiest way to demonstrate this potential vulnerability was to overlay a plan of Bathside Bay, with the nearest residential areas shaded, onto similar scaled maps of the other two schemes. This is shown in Figure 2. The Bathside Bay site is outlined in pink with the nearest neighbouring residential areas also shown in pink. Dibden Bay is shown in green and London Gateway in blue. Whilst it is recognised that distance alone is not the only factor that would have an influence on resultant noise levels, the exercise served its purpose and the developer realised that, compared to the other two schemes, Bathside Bay had a greater proportion of residential areas closer to the boundaries of its site, therefore environmental issues needed to be thoroughly investigated and mitigation measures provided, where necessary. This comparison does not, of course, necessarily extend itself to the judgement of relative impacts of transport related noise and vibration.

Figure 2: Comparison of container terminal schemes



Pink = Bathside Bay terminal and residential areas
Green = Dibden Bay terminal and residential areas
Blue = London Gateway terminal and residential areas

7. NOISE ASSESSMENT

In formulating a judgement on the noise impact or noise acceptability of any industrial, commercial or residential scheme in the UK, reference is usually first made to current Government policy. In England, planning policy, in a general sense, resides in a series of Planning Policy Guidance notes (PPG) many of which have now been superseded by

Planning Policy Statements (PPS). With respect to noise, the relevant document is PPG24 "Planning and Noise". This guidance is now 15 years old, and whilst there was an intent to update it with a revised PPS24, this revision is currently on hold. The aim of the guidance is *"to provide advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business".* PPG24 cites the use of British Standard BS 4142 "Method for rating industrial noise affecting mixed residential and industrial areas" for assessing the noise from proposed industrial developments. The scope of this standard, which has its origins in the 1963 Wilson committee report on the problem of noise, is to describe methods of determining, outside a building (i) noise levels from industrial premises or sources of an industrial nature in commercial premises, and (ii) background noise levels. It also describes a method for assessing whether the industrial noise is likely to give rise to complaint from people residing in the building. It compares the "rating level" of the industrial source ($L_{Aeq, T}$ + 5dB correction for character, where relevant), with the pre-existing background noise level, expressed as $L_{A90, T}$. A difference of +10 dB or more indicates that complaints are likely; a difference of +5 dB is of marginal significance.

The foreword to the standard acknowledges that it is not based on substantive research but on "accumulated experience". In the author's opinion, the standard is overdue for revision as its applicability to large industrial or commercial developments which operate 24 hours per day, 7 days per week must be questionable. In these situations, it is very likely that the noise from the industrial premises, be it an oil refinery, power station or container terminal, will be the main factor that controls the ambient noise environment, particularly at night. In most situations, if these plants were to shut down, background noise levels would decrease by more than 10 dB; but widespread complaints are not usually forthcoming from these types of developments as long as the absolute noise level is not excessive, and a new noise with an unusual character is not being introduced. Thus in the author's opinion, a better method for planning consent assessment purposes of noise from these large scale infrastructure projects, would be to place more reliance on long-term absolute levels of noise, particularly for the night-time situation. Given that a container terminal may develop over 10 years or more before it reaches capacity, it is not considered relevant to compare projected L_{Aeq} noise levels 10 years into the future with existing L_{A90} background noise levels. Do people have such long-term memories that they will feel urged to complain, based on a concept of a background noise level 10 years in the past? Given the experience of existing operating terminals, a new background noise level emerges, with time, which ought to form the basis for any future comparisons; the only relevance of the BS4142 assessment, in connection with existing background noise levels, might be when the terminal is first opened and a step change in noise level occurs.

In the noise assessment for the Bathside Bay container terminal, various alternative approaches were put forward, including one which relied on a comparison of L_{night} values, in Harwich, without and with the new terminal operating. The purpose of this was to try to take into account the variability in night-time ambient noise levels which was already experienced in Harwich due to noise from another container terminal (Port of Felixstowe). This was criticised, however, on the basis that there was no scientific evidence to indicate what the implication of a particular change in L_{night} value actually implied. Thus in the end, heavy reliance had to put on a noise assessment to BS4142, despite its weakness for this particular application.

Given the size of Bathside Bay container terminal and the proximity of a large number of residential properties to different parts of its perimeter, this type of assessment was undertaken for eight different wind directions (necessary because the existing background noise level varies significantly with wind direction). The assessment also extended to the area of Shotley on the north side of the River Stour from Harwich.

The outcome of this assessment showed that a difference of 10 dB or more in predicted operational noise level would occur for a fully operating terminal in 2017 compared to the background noise level in 2002/3, over a relatively wide area, and for specific wind directions. Whilst the predicted noise levels were not excessively high (the highest downwind night-time noise level was predicted to be 53 dB $L_{Aeq\ (free\ field)}$ and less than night-time noise levels at some other container terminals, the developer nevertheless decided to formulate and offer a sound insulation scheme to potentially affected properties, as a compensatory mitigation measure (see Section 8). A planning condition noise limit was also agreed as a free field level of 55 dB $L_{Aeq\ 1h}$ between 23:00 and 07:00, measured at a height of 4m at any existing residential property.

At Felixstowe South, the assessment of operational noise was simpler. It was possible to demonstrate, through the use of the noise model, that even with the increased size of the Felixstowe South development compared with that part of the port which it was replacing, noise levels would not increase at the nearest residential areas and a small reduction in noise level at certain residential locations was forecast; this is because it was possible to replace the older, noisier plant with a larger amount of new quieter plant and equipment. The one residential area where there was predicted to be an increase in noise level (of more than 1 dB) was due to increased HGV traffic on the internal port road to the terminal entrance. To protect nearby residential properties from this increase, a 4 m high timber noise barrier has been constructed. This barrier has also proved to be of benefit during the construction phase of this project. Noise limits were not set for the Felixstowe South development; instead the developer committed to a noise management programme with the local planning authority, which was designed to ensure no significant increase in community noise levels (see Section 11).

8. SOUND INSULATION SCHEME

It was acknowledged that a residual night-time noise impact would remain from the Bathside Bay container terminal even after landscaping and the use of inherently quiet plant and equipment and operating processes. The highest predicted noise level was 53 dB $L_{Aeq\ free\ field}$ at the nearest location, which combined with existing noise from the Port of Felixstowe, might increase night-time noise levels at specific properties to 55 dB $L_{Aeq\ free\ field}$. Whilst a strict comparison with other noise source types cannot be made due to relative response attitudes etc, the highest projected night-time noise level due to port related noise is still significantly less than the cut-on point for other statutory sound insulation schemes in the UK, such as that for new or altered railways (60 dB $L_{Aeq\ 6h\ free\ field}$) or roads (this is based on the daytime noise level, but would typically equate to about 61 dB $L_{Aeq\ night\ free\ field}$ for motorway traffic). The sound insulation scheme for Bathside Bay was zoned geographically but the cut-on point was based on those properties where there was a predicted noise level from the Bathside Bay container terminal greater than 45 dB L_{Aeq} or where the theoretical difference in future predicted noise levels and existing night-time background noise levels was greater than 5 dB. The total number of eligible properties was estimated as 4400.

As closed windows, even within single glazing, would be more than adequate to create acceptable internal noise levels at bedrooms at night with external noise levels of 55 dB $L_{\text{Aeq free field}}$, the purpose of the sound insulation scheme was primarily to provide a grant towards the installation of sound attenuated fresh air ventilation systems, although it could be used towards replacement windows, if so desired. Qualifying properties were those built before 1 January 2004, and those built of standard concrete or masonry construction. Take-up of the scheme would start six months prior to implementation of development, and it would expire five years after the commencement of the terminal. The scheme is in place, primarily to give members of the public peace of mind that there is help available if some night-time disturbance from noise is experienced once the terminal is built and is operational.

9. TRANSPORTATION NOISE

Both container port developments would increase road and rail traffic on local networks, so the noise implications of this had to be assessed in detail during the environment assessment phase. Bathside Bay would require a new section of the A120 to be built to take the volume of HGVs envisaged. As part of the Felixstowe South application, a new rail terminal would be constructed at the port, and the railway line between Felixstowe and Ipswich would be partly dualled to enable a larger proportion of freight to be moved by rail. The noise implications of the increased rail activity extended to Ipswich and to the assessment of increased activity at a freight marshalling yard in the city, and also to a locomotive refuelling and stabling depot, where there was a particular issue about night-time noise from idling diesel locomotives.

10. CONSTRUCTION NOISE

The impact of noise (and vibration) from construction activities is a very important consideration for the development of new deepwater container terminals. One of the most significant aspects of this is that a new quay wall has to be built in order to allow berthing pockets to be dredged to the required depth. This usually requires percussive piling techniques, and the piles can be very large. The main quay wall for the new Felixstowe South development, for example, is built from contiguous steel piles 38 m long and 2.56 m in diameter. As part of a Section 61 agreement with the local authority, under the Control of Pollution Act 1974, noise monitoring was undertaken to ensure that the noise from piling activity stayed within the defined noise limit of 70 dB $L_{\text{Aeq 1h (free field)}}$ and also that main quay wall percussive piling did not extend to more than 5 hours per day. The nearest residential properties are at a distance of typically 0.7 to 1 km from the line of the new quay wall. As would be expected over this distance, resultant noise levels vary significantly with wind direction, but under downwind conditions, measured noise levels of 65 - 68 dB L_{Aeq} are typical whilst percussive piling is taking place. The measured noise levels agreed reasonably well with the predicted noise levels given in the Section 61 application. These predictions were not, however, based directly on data provided by the hammer supplier, who produced noise test levels obtained in accordance with Annex G of EN 996: 1995/A2: 2003 (Piling equipment safety requirements: Noise test code for pile installation and extracting equipment). Unfortunately the code can only be used reliably to obtain noise data on the hammer itself, and not the hammer and pile in combination. The test code requires that the maximum height of the test pile on which the hammer is located is 2 m. Given that most of the noise radiates from the pile itself, the noise from a 38 m long pile for example, of the type used for Felixstowe South, bears no comparison with that from a 2 m long pile.

Agreement has been reached with the local authorities for both of the schemes that during the construction of the quay wall for the later phases of the scheme (when the piling operations are closer to noise sensitive locations), use will be made of a shroud during periods of percussive piling. Tests have been undertaken on one type of shroud which consisted of a bellows arrangement made from heavy duty polyethylene which is attached to the hammer via a rubber block and ring arrangement. The tests demonstrated that over the driven cycle of a pile, a reduction in noise level of 13 dBA could be achieved. However, great care needs to be given to ensure that the shroud is sealed, either into the water or onto the “gate” structure of the pile set-up. The use of a shroud, whilst beneficial environmentally, slows construction progress. Also, a shroud can only be used effectively where piles are free standing.

11. NOISE MANAGEMENT SCHEME – FELIXSTOWE SOUTH

Planning conditions for both schemes required a noise management scheme to be agreed with the local planning authority. The scheme has been prepared for Felixstowe South and is now a project document which is reviewed annually for adequacy and relevance. It is not anticipated that a scheme for Bathside Bay will be produced until the development is further advanced. The scheme for Felixstowe South includes the definition of roles and responsibilities, a commitment to the adoption of best practice for the specification and procurement of quiet plant and equipment, a prediction of operational noise levels, consultation and reporting processes for noise and vibration, noise monitoring procedures, actions to be taken in the event of non-compliance with the scheme, complaint response procedures and training requirements.

A key feature of the noise management scheme is the agreement on control points at particular community locations and the careful monitoring of the pre-Felixstowe South development noise levels, correlated with weather and port operational conditions. Following agreement of baseline noise levels, these then form the basis from which any changes to the existing noise environment will be judged. Parallel to the noise monitoring, the noise model of the port will be maintained and populated with “real” plant item noise emission data for Felixstowe South, when this information becomes available. After the new port operations start, if a “significant” change in noise levels is identified at the community control points, the noise model will be used, in conjunction with site investigations, to attempt to find the cause of the increase. A significant change is defined where the average night-time noise levels (as measured between 00:00 and 04:00 hours under defined meteorological conditions) are at least 3 dB different from the base-line results or 2 dB different from the results of the previous survey. Where a potentially significant increase in port radiated noise is identified, agreement then needs to be reached with the local authority on the action to be taken.

12. CURRENT AND FUTURE PLANNING REGIMES

Like most large infrastructure structure in the UK, the applications for the Bathside Bay and Felixstowe South developments were heard at public inquiries. Here a government appointed Inspector hears evidence from: the developer; the various statutory authorities including the local planning authority, other affected local authorities, parish or town councils, the Highways Agency etc; and any third party objectors to the scheme. The system is adversarial and resembles a court of law, usually with teams of barristers and solicitors on all sides. All parties produce written evidence and many experts are usually engaged, on different sides, to inform the inquiry of particular issues relating to their field of expertise. Witnesses are examined, cross-examined and then re-examined, and the

Inspector will also ask questions of the witnesses. To shorten proceedings, all experts are required to collaborate with other experts in their own discipline and produce a statement of common ground; however public inquiries are protracted affairs and can last for years. For example the inquiry for Heathrow's Terminal 5 lasted just less than four years. The inquiry for the Dibden Bay container terminal lasted for more than a year.

It was as a result of the Terminal 5 inquiry that gave the Government the incentive for structural reform of the major infrastructure decision making process which has led to the Planning Act 2008. This relates to "Nationally Significant Infrastructure Projects" mainly in England and Wales; these include energy related projects, transport schemes (including harbours), water and waste water projects and hazardous waste facilities. An Infrastructure Planning Commission (IPC) is being set up which will decide applications made under the new planning act. Consent will be decided by the IPC, composed of independent commissioners, on the basis of National Policy Statements. The Secretary of State will play no role in the process. However there will be an important intermediate stage before the National Policy Statements have been designated. These will be published in draft for consultation and go through a Parliament procedure involving scrutiny by a Select Committee. Until the relevant NPS has been designated, the application for development consent will be investigated by the IPC, but the final decision will be taken by the Secretary of State.

It is possible that the IPC may be short lived, as there has to be a general election in the UK by June 2010 shortly after the IPC comes into operation. The 2009 Conservative Party Green Paper states that a Conservative Government would cancel most of the 2008 Planning Act although it would intend to keep the concept of National Policy Statements, and concentrate on speeding up planning inquiries by focussing on material planning considerations instead of questioning the appropriateness of the project in principle. Whatever happens, there is likely to be a new National Policy Statement for Ports, which ought to consider environmental issues, including noise impacts. This may well have an effect on the decision making process for future container port schemes of the type described in this paper.

13. CONCLUSIONS

This paper has attempted to give an overview of how noise issues were, and will be addressed during the planning, construction and operation of two new deep water container terminals in the UK. Despite the worldwide recession which has hit the UK economy in 2009, there is still anticipated to be an increasing demand for ports, and port expansions and new port facilities can be foreseen. Undoubtedly these future proposals will all bring with them environmental issues, including the potential impact from noise and vibration. Whilst the planning regime in England and Wales is in a state of change with respect to these types of developments, the detailed investigation of noise and vibration issues, and the formulation of mitigation strategies and noise management schemes, as undertaken for Bathside Bay, Felixstowe South and similar other projects will almost certainly continue to be needed.