Statement on the proposed West Norwich Community Hospital development plans by local residents

November 2017

General statement

As residents of the area immediately adjacent to the Norwich Community Hospital, we welcome the proposed redevelopment of the hospital site situated between Bowthorpe Road, Dereham Road, Merton Road and Godric Place. Many of us are users of the existing facilities at the hospital, and we welcome the improvement and expansion of services on the site, including the rehabilitation or replacement of existing derelict infrastructure. We recognise the need for an expansion of capacity for adult social care in Norwich and Norfolk. We also recognise the need to identify and employ innovative ways of financing the improvement and expansion of health and related infrastructure and services, given the financial pressures on the NHS. We are encouraged that the initial plans and the consultation meeting held on Hotblack Road on the 26th September 2017 indicate an intention on the part of the developers to incorporate green spaces and sustainable transport components in the design of the new development. We believe that this development has the potential to enhance the surrounding area and the lives of its residents, as well as expanding access to essential services for the inhabitants of Norwich and Norfolk.

As with any such initiatives, it is inevitable that some local residents will have concerns about the short-term and long-term impacts of the development on the community. With the above in mind, we offer some comments on how the development might minimise any potential adverse impact on the local community, and be more acceptable to the members of this community. We also identify some potential risks relating to specific aspects of the development, and propose ways of mitigating these risks and avoiding unnecessary conflicts with the local community. Risks relate specifically to the history of subsidence in the area, associated with widespread medieval chalk mining, while the impact of the development on traffic and parking, and on the amenities of the properties adjacent to the development site, have the potential to trigger conflict with local residents. If these issues are handled sensitively and effectively, we see no reason why the development of the hospital site should not be welcomed by the vast majority of local residents.

Risks relating to chalk mines and subsidence

Nature of risks

The hospital site and the surrounding area sits over an extensive network of tunnels and related features, created in medieval times for the extraction of chalk, which was used in the production of lime. The tunnels are linked by large chambers (known as ‘roundabouts’), and are associated with other subterranean features including air shafts and the remains of lime kilns.

As a consequence of the tunnels and associated features, the area has a history of subsidence, as does much of west Norwich. On 11 November 1927, there was a large collapse on Merton Road, when a hole opened up spanning the width of the road and the pavement on one side of the road, and extending under these properties. In May 1936, the opening up of a void led to the collapse of three
properties, killing two residents[^1]. In the 2000s, two properties on Merton Road required extensive emergency underpinning due to subsidence associated with an underlying tunnel. Flats on Holly drive are currently being underpinned for the same reason.

Tunnels, ‘roundabouts’, shafts and kilns are detailed on maps of the area covering, and adjacent to, the development site. Mapped tunnels extend from Woodland Park (immediately north of the site) under the hospital site, and run under Merton Road and Holly Drive, which are situated immediately to the east and north of the site respectively. However, the mapping of these features is incomplete, the distribution and density of the tunnels is poorly known, and some areas remain unmapped. In recent correspondence, the surveyor who undertook the underpinning of the two properties on Merton Road that experienced subsidence in the 2000s cautions that “There are no reliable plans on the extent and location of the tunnels, just records of where miners [sent in to recover the bodies following the collapse of the three houses in 1936] plotted them.”

The construction of the Mulberry Unit on the existing site required extensive impact piling, and the Mulberry Unit is a much smaller and lighter structure than many of the proposed structures on the new development (such as the proposed care home, discussed below). It should be noted that current maps of the tunnel network do not indicate any tunnels or associated features under the Mulberry Unit. The need for extensive piling under the Unit underlines the limits of the existing maps.

An obvious concern to the residents of Merton Road and other roads adjacent to the development site is the potential for works and associated vibrations and disturbance to the tunnels to cause damage to properties that may already be at risk of subsidence and collapse due their location over voids and unstable ground. In an email to a local resident who had raised such concerns, the surveyor referred to above made the following statement:

> “[The developers will] have to take [precautions] in providing foundations for the three and four storey buildings they propose at the Merton Road end of the development site.

> The foundations are likely to have to be augered piles, which will entail localised grouting of the tunnels that the individual piles encounter.

> Any percussion driven piles would risk ground vibration collapse of tunnels that pass under the existing houses.

> Given that risk I would expect the developer to commission independent Chartered Surveyors to carry out detailed preconstruction surveys of all of the surrounding houses particularly along Merton Road and Holly Drive. Where there are cracks encountered in houses they should fix monitors to record any movement in the houses.”

Of particular concern in relation to disturbance to tunnels and associated risks to property and life is the proposed construction of a care home of up to four stories on the car park in the northeast section of the development site (Figure 1). Under the current plans, piles would need to be installed to support this construction, which is within 20 metres of properties on Holly Drive and within 40 metres of houses on Merton Road. The distance to gardens on

[^1]: These incidents are detailed in *Subterranean Norwich* by Matthew Williams, published in June 2017 by Lasse Press, ISBN 978-0-9933069-4-5. The locations of these subsidence events, and other areas of subsidence, are marked on maps obtained from the Norwich City Council.
Merton road will be considerably less; within 25 metres in some places. Some of these properties are constructed over tunnels and associated voids, as established from the history of the road and existing maps, and are at risk of subsidence and possible collapse. In-filling of tunnels is likely to be required in areas significantly closer to these properties than the immediate footprint of the proposed care home.

The vibrations from piling and in-filling of tunnels poses significant risks to adjacent properties. Given the history of subsidence, collapse, and associated fatalities in the area, the development also represents a risk to human life. This is a cause of deep worry for local residents, who include elderly people and young children. The impact of piling, drilling and infilling on adjacent properties needs to be taken extremely seriously by the developers and the NHS trust, and the potential for further collapses should be a major factor in how the development is approached.

**Figure 1.** Master plan of the site, from the consultation boards made available on the NHS Trust website at: http://norwichcommunityhospital.co.uk/index.php/public-consultation/.

**Potential mitigation options**

We propose the following measures to minimise risks associated with subsidence, and to address any residual risks that might remain after risk reduction strategies have been implemented.
1. A full, independent survey of the site and the surrounding area (extending significantly beyond the boundaries of the development site) should be undertaken, including geophysical survey work to identify, as far as possible, the location of voids and other potential subsidence ‘hot-spots’ both within and adjacent to the site. The developers should commission an independent structural engineering firm to undertake this survey, and the survey should include test drilling to improve understanding of the distribution of tunnels and associated features. The results of this survey should be readily available to the public, and uncertainties in the survey results should be highlighted.

2. A risk assessment should be conducted as part of / alongside the area survey. This should identify and assess potential risks to the areas adjacent to the development site, to properties and infrastructure (roads, footpaths, utilities infrastructure, etc.). Where risks are identified, measures to address these risks should be proposed. The feasibility of all aspects of the proposed development should be assessed in the light of this risk assessment, and the construction of buildings and other infrastructure currently planned over voids and other features associated with past mining activity should be reviewed in the light of any new evidence during the planning phase.

3. All residents in potentially at-risk areas should be offered a structural survey of their homes, the costs of which should be covered by the developers. The minimum extent of these areas should encompass the western side of Merton Road, Holly Drive, and the near sides of any other roads abutting the development site. Some residents may choose not to accept such a survey, but many will. These surveys will act as a baseline for the identification and monitoring of any new structural damage that may be associated with vibrations and disturbance to underground structures (tunnels, roundabouts, air shafts, kilns, and access points) resulting from the development of the hospital site.

4. Where the structural surveys of homes close to the site identify any existing cracks, subsidence or related damage, the developers should ensure that equipment is installed to monitor these features. The developers should cover the cost of this equipment, and the collection, analysis and interpretation of the resulting data by an appropriate, independent third party, approved by residents.

5. Where voids are detected under the development site that continue under adjacent residential areas, any in-filling of these voids should be carried out in a way that safeguards adjacent properties, for example by ensuring that in-filling does not stop at the perimeter of the development site, but extends under vulnerable properties. Drilling rather than impact/percussion piling should be employed to reduce vibrations that may damage adjacent properties.

6. Where development activity is associated with the movement of adjacent properties, the developers should be responsible for underpinning those properties and compensating residents.

7. The developers should seriously consider relocating the care home further towards the centre of the development site, and retaining the existing car park. This would significantly reduce the potential for damage to adjacent properties from piling and associated activities in close proximity to these properties. This option should be considered seriously.

8. The developers should take particular care to ensure that there is no ‘disconnect’ between planners, engineers and construction staff. Considerations of risks and impacts to adjacent properties need to be at the forefront throughout the planning, design and construction phases of the development.
Issues relating to the amenities of adjacent properties

The initial plans for the development include a care home of up to four stories situated at the northern end of the existing car park, three buildings of up to five stories for “extra care housing” in the southwestern part of the development, key-worker accommodation in two buildings of up to four and five stories at the eastern and northern edges of the site respectively, and a new hospital building of up to five stories to replace the existing hospital building in the northwestern corner of the site (Figure 1). Two office/retail buildings are planned in the southeastern section of the site.

The proposed new hospital building and 5-storey key worker accommodation will be located at the northern edge of the site adjacent to woodland park, and should not impact on residential accommodation. None of the extra care housing buildings in the southwestern part of the site are in close proximity to residential accommodation; the southernmost building faces onto a section of Bowthorpe Road without residential accommodation, and these buildings are separated from Godric Place by a separate development labelled in the plans as the NHSPS site. At the meeting on Hotblack Road on 26th September 2017, it was indicated that this would be a residential development, outside of the control of the developers of the Community Hospital site.

The greatest impact on amenities will be from the structures at the eastern end of the site, including the proposed care home in the northeastern corner of the site on the existing car park (up to 4 stories), the key worker accommodation south of the care home (up to 4 stories), and the office/retail building south of this (up to 3 stories). These structures will impact on the amenities of the properties on Merton Road and Holly Drive, immediately adjacent to the east and north of the site respectively.

The most dramatic impact on amenities will be from the care home, which will be within 15 metres of properties on Holly Drive, within 25-30 metres of the adjacent properties on Merton Road, and within 35 metres of properties on Dereham Road (Figure 2). With a presumed height of 20-30m, this structure would completely dominate the immediate area and, by reason of its size, depth, width, height and massing, would have an unacceptably adverse impact on the amenities of the properties immediately adjacent to the development site by reason of overlooking, loss of privacy and visually overbearing impact. The height of a 4-storey care home would be far in excess of the height of existing structures in the surrounding area, particularly those adjacent to existing residential accommodation. The maximum number of stories in the existing buildings on the hospital site is three, and other recently constructed care homes in the area, namely Ivy Court on Bowthorpe Road (a short distance west of the hospital site) and St John’s House on Heigham Road (off Dereham Road) are of significantly lower elevation. Ivy Court is two stories, and St John’s has a third storey in the eaves/roof space.

The proposed key workers’ accommodation (up to four stories) and office/retail building (up to three stories) will have a similar impact on the amenities of residential properties, particularly on Merton Road. Heights of 20-30m for the proposed 4-storey care home and key worker accommodation are potentially more than three times those of the adjacent residential properties, which are around 9m. At 20m (a minimum estimate for 4 stories), the height of the care home would be greater than the distance between the care home and properties on Holly Drive. At 30m, the height of the home would be greater than the distance to properties on Merton Road. The impact of such a structure would be overwhelming on these properties, and would also result in significant overshadowing and loss of light.
Figure 2. Representation of the proposed care home, key worker accommodation, hospital building and retail/office building in the northeast section of the site, from the Norfolk Community Health and Care NHS Trust website. Note that the proposals state that the care home will be up to 4 stories, and the key worker accommodation up to 4 and 5 stories. These figures are stated in the figure, but the drawings themselves suggest fewer floors. At 20m (a minimum estimate for 4 stories), the height of the care home would be greater than the distance between the home and properties on Holly Drive; at 30m, it would be greater than the distance to properties on Merton Road. These relationships are not apparent on the above drawing.

The above impacts on amenities are in addition to the risks associated with the construction of the care home and other large buildings in close proximity to residential properties in an area at risk of subsidence and collapse as detailed above.

The care home and key worker accommodation will also remove existing parking space, while increasing the amount of traffic onto the hospital site and thus increasing demand for parking (from key workers, non-resident care workers, social workers, medical staff, and family members of care home residents). This will adversely affect the amenity of the surrounding properties through additional roadside parking in the following areas:

i. On Godric Place, residents of which already experience problems with parking by staff from the existing Community Hospital;

ii. Adjacent to the junctions of Merton Road and Bond Street with Bowthorpe Road, which are already dangerous due to poor visibility;

iii. On Merton Road, an ‘access only’ road that is already used for parking by some non-residents;

iv. On Bond Street, the usability of whose narrow pavements is already sometimes problematic due to parking on pavements.

Issues related to parking are discussed in more detail below.
Potential mitigation options

There are a number of ways in which the developers might reduce the impact of the proposed care home on amenities, including:

1. Relocating the care home and key worker accommodation planned for the northeastern section of the development closer to the centre of the development site and further away from residential areas (this would also reduce risks to property and lives associated with construction in close proximity to properties at potential risk from subsidence discussed elsewhere);
2. Reducing the height of the proposed care home and key worker accommodation to no more than three, and preferably two stories, to be in keeping with the elevations of surrounding buildings including residential properties;
3. Employing stepped structures that reduce visual impact and issues related to privacy and overlooking;
4. Rethinking the nature and location of these aspects of the development to retain the existing car park (see also below).

Issues related to parking

As discussed above under ‘Amenities’, development of the Community Hospital site based on current proposals would increase parking pressure in the local area. The construction of the proposed care home and key worker accommodation in the northeastern section of the site, on the existing car park, would remove a large number of parking spaces. At the same time, the addition of these features would increase the amount of traffic onto the hospital site and thus increase demand for parking, for example from key workers resident on the site, and from visitors to the care home including non-resident care workers, social workers, medical staff, and family members of care home residents. This would result in increased pressure on parking in the vicinity of the development.

Parking was one of the main issues discussed at the meeting on Hotblack Road on 26th September 2017. The discussion of parking focused on a proposal for the introduction of a parking permit system for roads in the vicinity of the development site. This proposal was welcomed by two residents of Godric Place, who already experience problems due to staff and visitors from the existing Community Hospital parking on Godric Place. However, the proposal to introduce a parking permit system was opposed by the vast majority of those present at the meeting, which was attended by some 40 local residents. This opposition is based on the following considerations:

i. With the exception of Godric Place and some properties at the southern end of Merton Road, overspill parking from the existing Community Hospital currently does not pose a significant problem for local residents;
ii. If overspill parking becomes a problem as a result of the new development, this will represent a negative impact of the development, and this should be anticipated by the developers and prevented through appropriate measures incorporated into the development at the planning stage;
iii. A parking permit system will incur a cost to local residents in the form of charges for parking permits, which would be unfair given that most residents do not want a permit system;
iv. A permit system paid for by local residents, to address the loss of the existing car park to a private sector developer, would be a de facto subsidy to the developer by local residents. Such a system might also be viewed as a discriminatory stealth tax on local residents to help pay
for the hospital development. In reality, such a system would represent a combination of subsidy to the private sector and stealth tax to subsidise the hospital development at large;

v. The developers should ensure that there is adequate parking on the new site; at the meeting on 26th September it was stated that planning regulations would allow the number of parking spaces on the site to be reduced from its current level, but the developers would add extra spaces. However, it appears that the parking capacity of the new site will not be significantly greater than the present capacity. We are concerned that the developers are not incorporating sufficient parking capacity in the plans for the new development, and are pushing the responsibility for dealing with the resulting under-capacity onto residents of the surrounding area, whom the developers appear to expect to bear the financial costs of increased parking needs and the omission of adequate parking facilities in the development plans.

Potential mitigation options

We propose the following measures to address the likely increase in parking demand as a result of the new development:

1. Ensure that there is adequate parking capacity on the new site, expanding the capacity significantly from its current level;
2. Retain the existing car park currently earmarked for the construction of the care home: this would also address impacts on the amenities of local properties and concerns about disturbance, subsidence and the associated safety of local residents, in relation to the construction of the care home in an area of known voids and subsidence;
3. Ensure that parking for staff and visitors on the new site is free or at least very low-cost, to incentivise parking on-site rather than on neighbouring roads;
4. Offer a parking permit system on a street-by-street basis, so that those residents who would welcome a permit system can benefit from it, while those who do not want a permit system avoid having one imposed on them. This would require consultation with residents on a street-by-street basis, which could be facilitated by residents’ groups.