

Consideration of an alternative two-site option for elective care

1. The Building for Better Care capital funding was awarded via our ICS to improve access to emergency care, including a new emergency department at Ipswich, and to improve access to elective care through the re-provision of facilities for day case surgery at Colchester and the creation of a single elective surgery centre. For the purposes of comparison, this brief paper details the feasibility and estimated costs of a two-site option to expand and improve the provision for trauma and orthopaedics on both main hospital sites along with the replacement of the day surgery unit at Colchester.

2. Due to the value of the schemes, the letter confirming the award stated that release of the allocated funding would require NHSI, DHSC and HM Treasury approval of a business case demonstrating that the standard investment criteria have been met including affordability and value for money¹. The decision to divide the schemes between two business case streams (to avoid the potential for delay to improvements in emergency care due to the legal requirement for public consultation on plans for elective care) means that commitment to the funding for Business Case One – Emergency Care will be needed well in advance of completion and approval of Business Case Two – Elective Care.

3. The option of expanding existing facilities for trauma & orthopaedics on both sites was not included as part of the Pre-consultation Business Case because it did not meet the criterion of creating a single elective care centre on one site. Clarification concerning the potential use of the allocated funding for an alternative, two-site option for improvements to elective care has now been requested. Development of the options detailed at the end of this paper was guided by the following considerations:

- Facilities for any services displaced by or required for the creation of a new centre for elective surgery must be re-provided from within the available capital funding;
- Any centre for elective surgery should be adjacent to but separate from the main acute and emergency facilities to reduce the possible use of elective beds for medical outliers;
- Any elective orthopaedic surgical facility must have access to a minimum of 5 laminar flow theatres (with room for expansion to 6) and at least 48 elective inpatient beds;
- Access to any new facility should be good with convenient public and staff parking.

4. The possible expansion of existing facilities on both sites to facilitate clinical reconfiguration was considered during preparations for the merger for a number of clinical specialities (including trauma & orthopaedics). The alternatives were complicated by the requirements of maintaining, and ideally improving, appropriate clinical adjacencies whilst minimising disruption to the delivery of clinical services during building works with very limited decant space available. Selection of alternative options was also influenced by the fact that new build facilities are significantly more expensive than the refurbishment of existing clinical space. This is because the floor area required (a key driver of cost) to meet mandatory NHS Health Building Note (HBN) standards for any new build facilities is never less and usually considerably greater than the space needed when existing facilities are refurbished (where derogations from HBN standards are permitted). However, providing additional space for an existing clinical service almost always requires an adjacent clinical service to be re-located which, in turn, creates the need for a new-build facility for the displaced service which has to be built to HBN standards. This was further complicated by the shortage of suitable clear building sites for new facilities on both main hospital sites.

¹ Letter from NHSI dated 4 April 2018, 'Capital funding for implementing sustainability and transformation plans – CHUFT/IHT – Hospital reconfiguration to support clinical strategies post-merger.'

5. Alternative Option: Two-site expansion and new build day surgery unit at Colchester.

Colchester Hospital does have existing facilities that could be modified to increase the laminar flow theatre capacity available to trauma & orthopaedics. The separate modern facility known as Constable Wing offers good clinical space with good adjacencies to essential clinical support services in the main hospital buildings connected by a covered link corridor. The 3-storey Constable Wing currently has 5 operating theatres on the top floor (3 used for elective orthopaedic surgery (day case and inpatient) with laminar flow) and 2 ward areas used for elective orthopaedic surgery (day case and inpatient). Conversion of the remaining 2 theatres would ensure that laminar flow was available in all 5 theatres and provide a laminar flow theatre for trauma and an additional laminar flow theatre for elective orthopaedics/trauma at minimal cost. An additional 26-bed elective orthopaedic ward could be provided by the re-allocation of the women's surgical ward/EPU on the floor below. However, the theatre currently used for gynae and breast surgery and the women's surgical ward/EPU would have to be replaced with a new-build theatre and a new-build 26-bed ward built to the latest HBN standards.

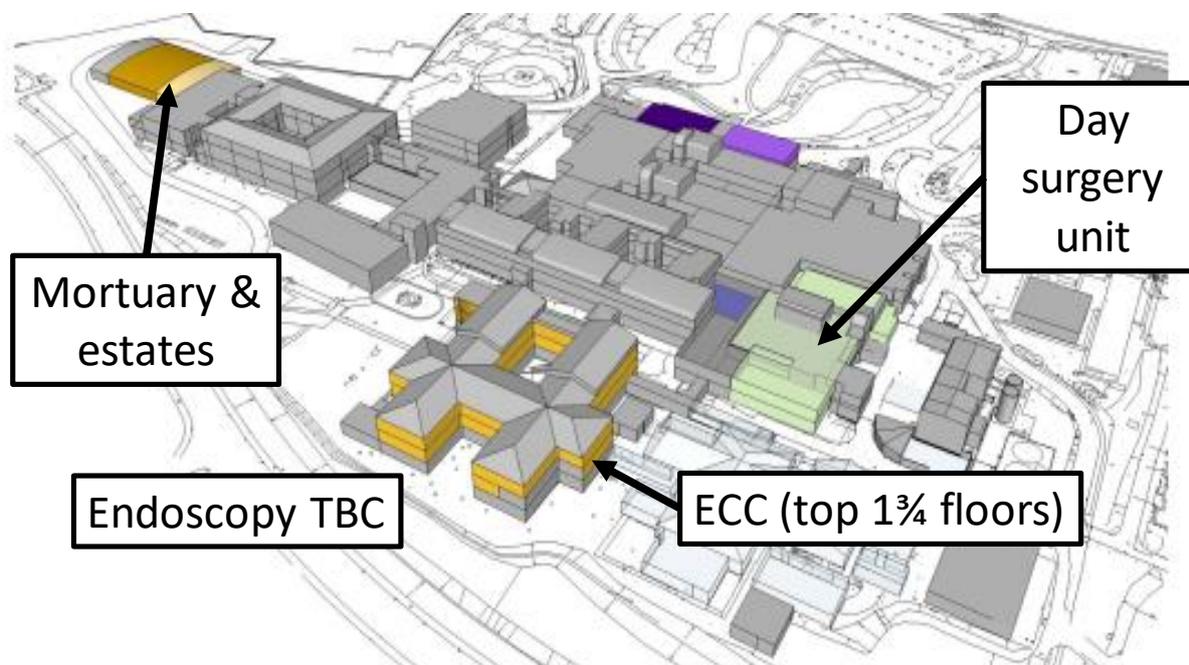
6. Whilst it may be possible to provide a new 3-storey extension on the south side of Constable Wing, this site is constrained by existing buildings and would not offer sufficient space for the replacement ward, theatre and the new day surgery unit so a second new building would be required. The old site of the chemotherapy suite would be the obvious location for any new build at Colchester. This site would allow the necessary space for both a new day surgery unit along with a new inpatient theatre (with space for an additional new theatre) and a new 26-bed ward to replace the facilities converted for use by orthopaedics. This space for the additional inpatient theatre may not be in the ideal location for the additional orthopaedic activity expected in the future but would be on the site most likely to need additional elective theatre capacity. The new day surgery unit would re-provide the existing facilities consisting of 4 theatres (suitable for laparoscopic surgery); a major treatment room; admission cubicles; and suitable recovery spaces but, as a new-build facility, would have to be designed in accordance with the latest HBN standards. Moreover, to replicate the provision offered by the existing preferred Option 4B one of the new day theatres would have to include provision for laminar flow. The site is connected to the main hospital buildings by a corridor and, when completed, the provision of the new day surgery unit would allow parts of the existing facility to be re-used/demolished (along with the soon to be replaced cardiac catheterisation unit) to provide convenient patient parking directly adjacent to the new facilities, the maternity unit and ante-natal clinics. Specifically, re-use of the vacated old day surgery unit as the endoscopy unit would provide a much needed JAG compliant endoscopy unit at minimal cost. In spite of the additional decked car parking under construction at Colchester there is severe pressure on the current parking provision for staff and patients on both sites as activity continues to grow. An entrance off the main Northern Approach Road (subject to appropriate permissions and funding) ideally combined with a new link road behind Constable Wing would both improve hospital site access for patients and staff and reduce traffic congestion for local residents.

7. Ipswich Hospital also has existing facilities that could be modified to increase the laminar flow theatre capacity available to trauma & orthopaedics. East Theatres has 4 theatres (2 currently used for elective inpatient orthopaedics with laminar flow) and 2 wards directly adjacent used for elective orthopaedic surgery and trauma/spinal surgery. Conversion of the remaining 2 theatres would ensure that laminar flow was available in all 4 theatres and provide a laminar flow theatre for trauma (which would be re-located from South Theatres) and an additional laminar flow theatre for elective orthopaedics/trauma at minimal cost. An additional 28-bed elective orthopaedic ward could be provided by the re-allocation of the trauma and spinal surgical ward; however, this would have the result of separating the trauma ward from the trauma theatres which would be far from ideal. Therefore, it may

be preferable to create additional beds for trauma by using the spinal beds for trauma and then combining the replacement spinal beds with additional elective orthopaedic beds in a new ward. Either way the theatres currently used for spinal surgery and the ward would have to be replaced with 2 new-build inpatient theatres and a new 28-bed ward built to the latest HBN standards. A number of alternative locations could be made available for new buildings on existing car parks at Ipswich Hospital; however, all would require replacement of the lost parking in the form of a multi-storey car park, re-routing of roads and provision of a covered connection to the existing hospital buildings for patients. The car park site next to the Garrett Anderson Centre would probably be the preferred site for a new-build facility to replace the 2 inpatient theatres used for spinal surgery along with a new 28-bed ward. The new-build facility at Colchester required for this alternative option would be only marginally smaller than the elective care centre along with the associated works in Option 4B and has been independently costed on the same basis at £41.5m. The works at Ipswich including the new-build facility and multi-storey car park has been estimated to cost £31.7m giving a total cost for this alternative option of £73.2m. If it were to be assumed that replacement parking was not required then the cost could be reduced to £60.7m.

8. **Option 1: Business as usual.** This was the 'do minimum' option with no significant change to existing arrangements. This option would not deliver the capacity required and, although not considered a viable option, it was used as a benchmark to demonstrate the 'business as usual' position.

9. **Option 2: Redesign existing space at Colchester.** Colchester Hospital has existing facilities that could be modified for use as a centre for orthopaedic surgery. The separate modern facility offers good clinical space with good adjacencies to essential clinical support services in the main buildings connected by a covered link corridor. As previously stated, this building currently has 5 operating theatres on the top floor (3 with laminar flow) and 2 wards used for elective orthopaedic surgery (day case and inpatient).



Option 2: Redesign existing space as ECC and DSU at Colchester

10. If this existing facility were to be used a number of clinical services would be displaced and, in simple terms, in addition to the replacement for the day surgery unit, another new inpatient ward and three new theatres would have to be built from within the allocated capital budget. A potential location for a replacement day surgery unit would be in the main hospital building adjacent to the surgical admissions ward in the space currently occupied by the restaurant and offices on the first floor (which

would need to be re-located). Patient reception and recovery areas could be provided on the ground floor in the space which could be vacated by a move of the mortuary and bereavement suite, estates workshops and the goods delivery yard to the current medical records facility. This option would involve a large number of inter-dependent phases of building work in or directly adjacent to clinical areas that would be likely to be highly disruptive to other clinical services. Moreover, the extensive nature of the work and sequential clinical service relocations would require a temporary decant facility. This option was not considered to be practically buildable or affordable and was not shortlisted for further analysis.

11. **Option 2A: Redesign existing space at Ipswich.** Ipswich Hospital was considered but no suitable building could be found with the required clinical adjacencies for redesigning existing space as a centre for orthopaedic surgery. Much of the clinical space at Ipswich now needs updating which cannot be completed without suitable vacant space to take the existing clinical services while the work is completed. The pressure of demand on the existing clinical space means that decant space is not currently available but it would become available if the centre for orthopaedic surgery were to be located at Colchester.

12. **Option 3: New build ECC at Ipswich and new build DSU at Colchester.** A variety of locations were considered with the location of the existing Education Centre at the heart of Ipswich Hospital (**Option 3A**) an obvious place to be re-developed for clinical use. Whilst this location is constrained on three and a half sides by existing buildings, it is well located beside the main hospital corridor with good adjacencies to essential clinical support services. It should be noted that a new build orthopaedic surgery centre on this site would require more than two storeys to provide the necessary floor area. In view of the adjacency to residential housing, outline planning permission would have to be established at the earliest opportunity. Before the site could be cleared for building, a replacement Education Centre would have to be provided (not included in costing) which would be likely to involve use of existing car parking space that would almost certainly have to be re-provided by building a multi-storey car park.



Option 3A: New build ECC on education centre location at Ipswich and new build DSU at Colchester

13. Alternative locations were considered for the orthopaedic centre at Ipswich Hospital site on car parks adjacent to existing clinical buildings and, whilst not requiring a replacement Education Centre, all would almost certainly require replacement of lost parking in the form of a multi-storey car park, re-routing of roads and provision of a covered connection to the existing hospital buildings for patients. However, these less constrained car park sites should permit the necessary floor area to be provided across two floors rather than three. If the site next to the Garrett Anderson Centre (**Option 3B**) were to

be used the cost and complexity of linking the new building to a private finance initiative funded building would have to be factored in. The major decant and building work that will be in progress to create the new expanded Emergency Department and Urgent Treatment Centre at Ipswich Hospital may further complicate delivery of this option.

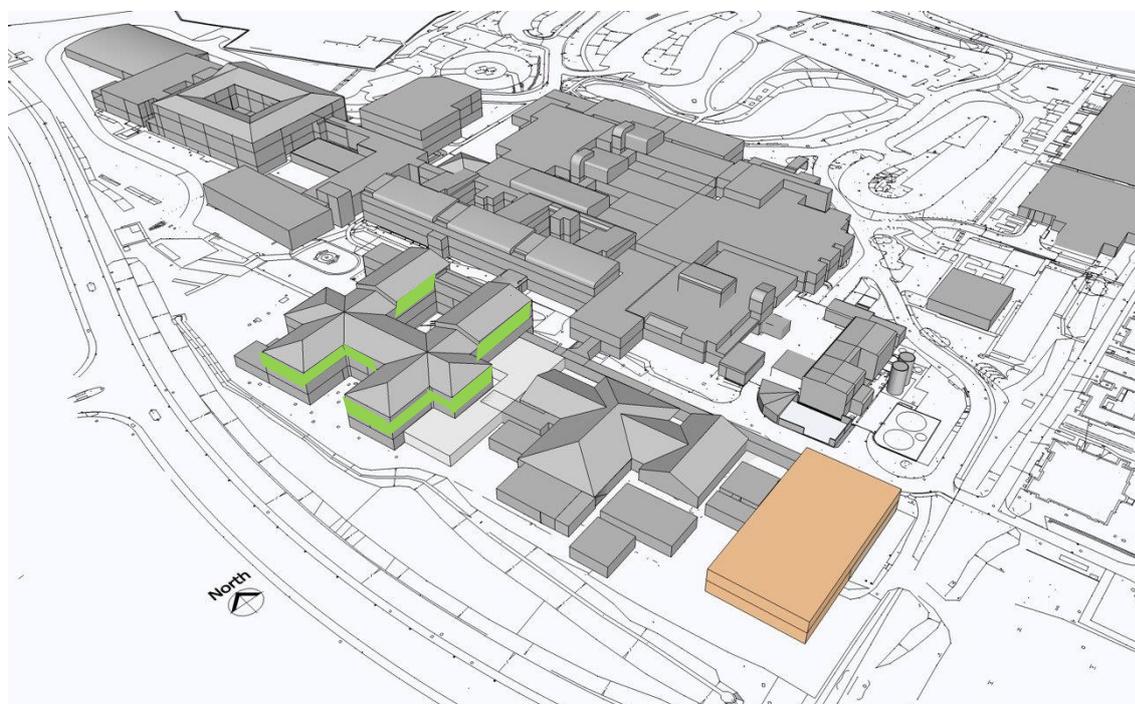


Option 3B: New build ECC on existing car park at Ipswich and new build DSU at Colchester

14. Most importantly, with Option 3, the space vacated at Colchester by the centralisation of elective orthopaedics at Ipswich (one inpatient ward and two theatres) would not be sufficient to be re-used as a replacement day surgery unit. Therefore, any Ipswich site option for the orthopaedic centre would result in the requirement for a new build replacement of the day surgery unit at Colchester. This adds significantly to the cost (compared with the cost of refurbishing existing clinical space) mainly because the floor area required to meet mandatory HBN standards is considerably more than the space currently used for the equivalent facilities. The estimated cost of Option 3 (A or B) (excluding the cost of a replacement education centre) is £77.5m and if it were also to be assumed that replacement of the lost parking was not required then the cost of this option would be £65.1m.

15. **Option 4: New build ECC at Colchester and DSU at Colchester.** The old site of the Chemotherapy Suite is the obvious location for a new build at Colchester Hospital. This site has the necessary space for a new orthopaedic centre to be provided over a number of storeys that would be most unlikely to be constrained by planning permission. As previously stated, the site is connected to the main hospital buildings by a corridor and, when completed, the provision of the new day surgery unit may allow parts of the existing facility to be re-used/demolished (along with the soon to be replaced cardiac catheterisation unit) to provide convenient patient parking directly adjacent to the new facilities, the maternity unit and ante-natal clinics. Specifically, re-use of the vacated day surgery unit as the endoscopy unit would provide a much needed JAG compliant endoscopy unit at minimal cost. In spite of the additional decked car parking planned for construction in 2020 at Colchester there is severe pressure on the current parking provision for staff and patients on both sites as activity continues to grow. As previously stated, an entrance off the main Northern Approach Road (subject to appropriate permissions and funding) ideally combined with a new link road behind Constable Wing would both improve hospital site access for patients and staff and reduce traffic congestion for local residents.

16. There are two alternative options for the replacement of the existing day surgery unit. The simplest option (**Option 4A**) would be to incorporate the replacement into the ground floor of a new 3-storey orthopaedic centre leaving orthopaedic day surgery in the existing facilities and orthopaedic outpatients and fracture clinics in main outpatients at Colchester. The design of the centre would obviously have to ensure that the elective orthopaedic beds and theatres were completely separated from the day surgery unit. A major advantage of this option would be the removal of requirement for sequential, inter-dependent phases of building work and clinical service relocations because all building work could be completed in a single phase without disruption to existing clinical services. The vacated elective ward and the two laminar flow theatres (along with most of the capacity of the admission and recovery ward) would offer a number of alternatives for reconfiguration of other clinical services and the vacated day surgery unit would be suitable for use as a compliant endoscopy unit with minimal adaptation. However, this option would exceed the available budget because not only would a new build day surgery unit be required as part of a 3-storey orthopaedic centre (rather than a re-use of an existing facility) but this new facility would have to be built in accordance with HBN standards which requires considerably more space than currently used for the equivalent facilities. The estimated cost of Option 4A is £77.5m.



Option 4B: New build ECC and redesign existing space as DSU at Colchester

17. The most cost efficient option (**Option 4B**) would be to use the space vacated by a move of elective orthopaedics as a replacement day surgery unit. This could be achieved with minimal re-work and there would be likely to be a significant cost saving from the re-use of existing clinical space rather than a new build to the latest HBN standards. As described previously, this existing facility has five operating theatres (3 with laminar flow used for elective orthopaedic surgery) and two wards currently used for elective orthopaedic surgery (day case and inpatient). Four theatres and a treatment room would be required for the replacement day surgery unit so, assuming the current trauma theatre is kept for that use (with good adjacency to the trauma wards) and the current breast and gynae surgery theatre is kept for that use (with good adjacency to the women's ward on the floor below), an additional theatre would have to be built (probably replacing the current recovery area which would then need to be re-provided in the adjacent ward area) along with the provision of a suitable treatment room. Again the vacated day surgery unit would be suitable for use as a regulatory compliant endoscopy unit with minimal

adaptation along with connection of the new endoscopy unit to the adjacent scope decontamination facility (or relocation of that facility). The activity from the laminar flow theatre currently used for orthopaedic day case activity would also have to be re-located (probably to the new orthopaedic centre at first). However, the reduced requirement for a 2-storey new-build facility combined with re-use of existing clinical space offers significant capital cost savings. The estimated cost of Option 4B is £43.6m.

18. **Option 5: New build ECC off-site and DSU at Colchester.** This option was included for consideration following early pre-consultation engagement during which the possibility of building on a site between the two hospitals was raised. The alternative sites most often mentioned were the retail parks at the new Colchester Stadium or the Copdock roundabout (where the A12 and the A14 roads intersect) between Ipswich and Colchester (known for severe traffic delays at peak times). Consideration was also given to introducing a discrete option of an off-site location for the orthopaedic centre but on an existing community hospital site but this was not separately identified because the issues of an off-site location would be broadly similar regardless of the site selected. The main differences between using an existing acute hospital site and an off-site location would be the additional cost of land purchase and the cost of re-provision of essential clinical and non-clinical support services. In brief, a centre for orthopaedic surgery built away from an acute site would also require provision or easy access to an ITU, blood bank, radiology service, decontamination service and a number of other clinical and non-clinical support services which would have to be available 24/7 (but would be most unlikely to have the critical mass of activity needed for efficient delivery of services). Regardless of whether the cost of providing facilities for these services at an off-site location could be met, it may be assumed that it would not be possible to recruit the extra clinical staff necessary to provide sustainable operational cover. This option was not considered to be clinically acceptable or affordable and was not shortlisted for further analysis

Option	Description	Cost
1	Business as Usual	Benchmark
2	Redesign existing space as ECC and Day Surgery Unit (DSU) at Colchester	Not costed
2A	Redesign existing space as ECC at Ipswich and DSU at Colchester	Not costed
Alternative	Two site expansion of T&O facilities with new build DSU at Colchester	£73.2m
3 (A or B)	New build ECC at Ipswich and new build DSU at Colchester	£77.5m
4A	New build ECC combined with new build DSU at Colchester	£77.5m
4B	New build ECC and redesign existing space as DSU at Colchester	£43.6m
5	New build ECC off site and DSU at Colchester	>£77.5m

Table 1: Summary of Estates Options considered with costings

19. **Conclusion.** There are existing facilities at both Ipswich and Colchester that could be modified at relatively low cost to increase the ultra-clean theatre capacity and inpatient beds available to trauma and orthopaedics; however, the theatres and inpatient beds reassigned to orthopaedics would then have to be replaced with costly new facilities built to HBN standards for the clinical services displaced. In order to demonstrate best use of limited public money, it would be necessary to show that the only option which is significantly less expensive in terms of capital costs than all of the other options (including the alternative two-site option) did not meet the critical success factors and was not a viable option. If this could be done then the more expensive option selected would also have to demonstrate the requisite NHSI return on investment which would be neither credible nor deliverable. Whereas, the qualitative and quantitative options appraisals already carried out clearly demonstrate that the highest ranked, and therefore the preferred option, would be a new centre for elective orthopaedic surgery and refurbished day surgery unit at Colchester: Option 4B which is the least expensive and the only affordable option.

Addendum to consideration of an alternative two-site option for elective care

1. Recent developments have resulted in three additional considerations which offer further potential advantages for the creation of a centre for elective orthopaedic surgery at Colchester Hospital.
2. **Minimum Case Numbers.** Work is underway to define the minimum number of complex cases that must be completed by procedure, by site and by surgeon to provide the most reliable patient outcomes with low complication rates. This is part of the GIRFT initiative to establish robust regional networks with regional centres to ensure appropriate critical mass for complex and low volume cases. The proposed requirement from the British Association for Surgery of the Knee (BASK) is for hospitals to do a minimum of 30 revision knees per year and for individual surgeons to perform a minimum of 15. National Joint Registry numbers show that Colchester would be likely to qualify but that Ipswich (with only 8 cases) would not. The British Hip Society (BHS) was undertaking a similar exercise but has not agreed minimum numbers to date. Last year approximately 80 hip revisions were performed at Colchester and 28 at Ipswich (CUH 70, NNUH 90) so that, unless elective orthopaedics is consolidated onto a single site, there is a distinct risk that either one, or both, sites would fail to qualify to conduct elective revision surgery in the future. Moreover, to treat periprosthetic fractures (which are an increasing problem in frail elderly patients) revision expertise is a requirement and based on our numbers these patients may need to be transferred elsewhere. Whereas, if elective orthopaedic activity were to be consolidated in an elective care centre ESNEFT would have the numbers required to be a “spoke” or even a specialist “hub”.
3. **NHS Elective Waiting List.** The current Covid-19 response has resulted in significant loss of capacity to carry out elective surgery across the NHS for an extended period. Waiting times were already approaching a year for many hospitals and are likely to have extended considerably before routine elective surgery has resumed. This is a particular concern for orthopaedics where cases can be long and require special ‘ultra clean’ facilities. Additional capacity will be required for the next few years to bring orthopaedic waiting lists down and the additional operating capacity that a new centre for elective orthopaedic surgery would bring has never been more needed. In fact, a strong case could be made to fast-track approval of this investment to avoid the cost to the NHS of having to use private sector capacity.
4. **Future Infection Contingency.** Current plans to use local private hospitals as Covid-19-free ‘Green’ sites at which to resume elective surgery have highlighted the need for a future hospital infection contingency facility on an acute site with access to ITU and other clinical support services. There is an opportunity to design the new centre for elective orthopaedic surgery so that it could also serve a dual purpose as a separate hospital contingency facility. It would be on an acute site and already have a separate entrance for staff and patients, large changing rooms with multiple showers, mainly single rooms and ‘ultra clean’ laminar flow theatres. The addition of an extra floor to the building with outpatient facilities (including x-ray), day surgery admission cubicles, anterooms for donning and doffing PPE, a separate vacuum insulated evaporator (VIE) for oxygen and, potentially, rooms with negative pressure ventilation could provide a flexible contingency to keep clinical services operating in the case of a future infection outbreak at minimal additional cost to the NHS.