Openreach 'Mini-Hostel'

General	The Openreach 'Mini-Hostel' enables a wide range of accommodation to be exploited for LLU Co-location purposes. Whilst retaining many of the design features of the Openreach LLU Hostel it is designed to be cost effective where there are low levels of demand for physical co-location – **specifically from one to four 'B' Type Bays**. Where more than four Bays are required then the 'standard' Hostel product will be designed. Each 'Mini-Hostel' will be designed for lowest build cost. There is a requirement to reduce build costs to within levels set by industry hence the provision of facilities to enable remote monitoring of the Mini-Hostel room environment by Openreach will be minimal (i.e. fixed head smoke detection only). As a consequence, CPs will be operating with increased risk levels as Openreach will effectively be operating blind (eg to unauthorised entry, high temperatures and/or ventilation equipment failure). CPs with requirements that would not be satisfied by the Mini-Hostel product have the alternative 'Bespoke co-location room' product to call upon. The Mini-Hostel is not to be confused with 'Bespoke' co-location rooms. Equipment deployed by CPs will need to be suitable for operation in an environment designed to meet the ETSI 300.019 standard.
Diagram	Appendix A provides a pictorial representation of just some of the possible room layouts.
Hostel Layout & Dimensions	• Each 'Mini-Hostel' will comprise a room separated from BT operational areas by a wall that is compliant with the building regulations and relevant BT security policy. Fire stopping will be provided where cables route through walls, floor or ceiling. • Where possible, use of accommodation able to have its own external entrance door will be made. • Equipment Bay**:** The Bay will consist of usable rack installation floor space of 800mm depth (front to back) x 1800mm (width). CPs may install a range of rack or cabinet sizes and types within the area of the Bay dimensions – eg 3 @ 600x800, 6 @ 600x400 or 600x300mm or any combination thereof. The layout allows access to both sides of the Bay which will be advantageous for CPs using 'back to back' rack configurations or cabinets having front and rear doors. • Where cheapest and practical, the HDF and ac final distribution board hardware will be fitted at one end of the Bay. This will reduce CP cabling costs. Alternative HDF and/or ac final distribution board positioning may instead be used if cheaper or necessary – e.g. wall mounted. • Where possible, the clear height over each Bay will be not less than 2400mm. • If, during the survey and/or design period, it appears unlikely that a clear height of at least 2400mm over the full area of the Bay(s) can be offered then Openreach will refer the order back to the CP(s) and ask if the estimated available clear height would be acceptable. To

	avoid abortive cost, work on the design would stop until Openreach is advised that the CP(s) agree to proceed. • Gangways between Bays will be not less than 1200mm wide to allow for safe equipment handling, cabinet door opening and heat dilution. • Perimeter gangways of not less than 1200mm clear width where required for access from the entrance doorway and adjacent to the cooling strip (if required). Where not required for entry, exit or equipment handling (including cooling units), a perimeter gangway may be reduced to 900mm. • The position of each Bay will be marked on the finished floor as part of the build process and shown on the floor plan. Openreach will provide electronic copies of the floor plan to the relevant CP(s). There will be a design drawing to show the offered solution at the Full Survey stage and an 'as built' drawing at the completion of the project. To show each Bay area, floor markings shall be formed using 50mm wide lines. The internal edge of the marking lines shall indicate the external dimensions of the Bay - i.e. the area enclosed within the rectangle formed by the marked lines will be 800mm x 1800mm. The outer dimensions of the marked rectangle will thus be approximately 900mm x 1900mm. • Bays will be numbered within each hostel - i.e. Bay 1, Bay 2 etc and marked on the floorplan(s) by the designer. • Fire exit provision (if required) will be compliant with relevant building and fire regulations as interpreted by the professional building design consultant. • Any existing functional Openreach cable runways routed through a Mini-Hostel will be enclosed where removal is not cheaper. • Floor loading: The maximum floor loading imposed by CPs equipment must not exceed the level that may be notified by the Openreach design team on the room drawing(s). This may typically be up to approximately 9kN/m2 but may vary between hostel rooms. The possible adaptation of welfare areas and offices will introduce situations where ceiling heights and floor strengths will vary from 'normal' operational standard accommodation. If Openreach believes that the relevant floor strength is less than 6kN/m2 then the design will be stopped to avoid abortive cost and the affected CP(s) asked to confirm the total, maximum installed weight of their equipment per Bay. In practice, if the total maximum weight of the CP equipment does not exceed 1000kg per Bay then few loading related problems are anticipated. • Use of raised flooring is not a design feature.
Building Access & Physical Security	• Covered by relevant BT Security policy for LLU. • Where possible, a secured means of entry to the Hostel allowing unescorted access 24 hours a day, 7 days per week will be provided (otherwise access will be on a fully escorted basis). The doorway(s) shall be of adequate size for manual handling of equipment into the room. **Note:** Given that rack dimensions appear to be based on 600mm widths and minimised room build costs are required, then the use of a standard sized personnel doorway may prove adequate – subject to a satisfactory method of cooling unit replacement. • No access to BT operational areas by LLU CPs personnel. • Where direct entry can be provided and the internal wall is of block, brick or 'expamet' reinforced partition construction then a suitable mechanical door lock will be used. • To permit essential access by Openreach for maintenance, repair, test or inspection purposes, a key will be held in a key safe on site.

	• Escorted Access may be used as a last resort. • CPs will be responsible for ensuring that room security is maintained at all times.
AC Power	• The maximum operating power load of a Type B Bay is 4kW. • Openreach will generally provide one final distribution board per Bay. • This will normally comprise a 4 way, 32A, 3 Phase unit offering a total of 12 fuse positions. One of the fuse positions in each Bay will be used for a 6A fuse feeding a radial circuit with one double outlet switched socket for temporary use – eg tools and testers. • The final distribution board(s) may be mounted either at the end of the Suite on unistrut based cable services ironwork or on a wall – whichever is cheapest in the circumstances. • Sub metering of power consumption per Bay. Sub-meter unit(s) will be installed in a protective enclosure close to the distribution board and in the room. • Openreach provided DC power is not a design feature. • Openreach does not provide UPS as a design feature. • AC Supply will be provided via the Openreach Non-Essential Services Supply (Non-ESS) unless sufficient, unassigned, standby power capacity exists and has been requested by at least one CP. To minimise build costs, the ac supply into the Mini-Hostel room will be either Non-ESS or ESS. • *Note: CPs may request a separate estimate of the cost to upgrade ESS capacity where Openreach is unable to provide this at the time of room build.* • CPs will be required to provide to Openreach relevant electrical test certificates following connection of CPs equipment to the final distribution board fuseway(s). • A separate fuseboard and sub-meter will be provided for the room cooling and lighting equipment where there are two or more Bays. A single power outlet shall be provided from this supply for room cleaning and Openreach test/inspection purposes. • Where there is only one Bay, the cooling and room lighting supply will be fed via the same sub-meter and final distribution board as used to serve the Bay (possibly a 6 way, 3 phase unit – allowing 4 ways for the Bay itself). • The sub-meter reading method used will be that which is cheapest to build for adequate remote reading capability. • CPs are required to ensure that their ac power load is reasonably balanced over the phases provided.
Ventilation & Cooling	• Where availability of floorspace is not constrained, cooling will be designed for the **lowest build cost** based on the maximum permitted power load (i.e. 4kW per Bay). • Where space is constrained (such as a 'receive' site forming part of a building disposal scheme) then the cooling design will be biased towards efficient usage of space in the interests of other potential users. • The room heat density will not exceed 400 W/m2. • Designers will take advantage of cost minimisation opportunities such as heat density thresholds of <240W/m2 (only one unit required) and <60W/m2 (up to which natural ventilation may be offered if space is available and is cheaper allowing for additional costs including a sum equivalent to 2 years room licence charge).

	• If required, a cooling strip of sufficient width to locate the cooling unit type employed will be provided. The design will meet building specific requirements plus any noise attenuation measures deemed necessary to meet local authority targets. Note this is additional to the perimeter gangways. • For cost reduction reasons, there will be no high temperature alarm or cooling unit failure alarm connection to Openreach reporting points. An CP may connect its own alarm system to the cooling unit alarm contacts (where provided). *Note: CPs may request an estimate of cost to upgrade to an Openreach alarm monitoring system.* • Cooling units will be Openreach maintained.
Smoke/fire detection	• Smoke detection will be provided within the 'Mini-Hostel' room and integrated accordingly. • Use will generally be made of fixed head detectors. • Fire extinguishers, call points and sounders located to meet relevant statutory regulations. • No fire suppression (e.g. halon and/or sprinkler systems). • Exit routes and signage provided.
Cable Services Ironwork.	• Sufficient overhead ironwork will be provided to allow cabling to/from HDF's and power distribution boards. • CPs may affix their cabling and equipment to the overhead ironwork provided by Openreach. • In the interests of safety if a CP seeks to supply alternative means of enabling cabling across gangways between their Racks & Openreach provided HDF and Power Distribution Boards, the methods used will be agreed in advance with Openreach . • Where assessed to be cheapest, use may be made of the standard 'Hostel' ironwork design to retain the 'end-of-suite' cable services island in which the HDF racking is located and across the end of which is the ac final distribution board mounting panel. • In low ceiling height or otherwise constrained areas it is permissible to design for 'best fit'. Where standard hostel Bay clear height (i.e. 2400mm) cannot be provided to Bays and/or access gangways then the available height(s) and /or restrictions must be clearly marked on the relevant floorplan(s). Note: The relevant CP(s) would have previously agreed to proceed with the design. • Openreach provided ironwork will be 'Unistrut' based for simple assembly. It will be braced and with sufficient wall fixings as deemed to be required for safety and stability by the design team. • Incoming ac power trunking will be attached above the final distribution boards to give, where possible, >2400mm clear height. • Sufficient clearance will be maintained to allow ac power cabling to be routed out of the final distribution board to the final point of connection by the relevant CP. CPs may drill the end-of-suite mounting board (where provided) for cabling purposes. • Cable bearers shall be finished in such a way as to minimise the risk of injury to personnel and/or damage to cabling by covering and/or radiusing edges/ends. • The incoming steel trunking provided for AC distribution provision to the final distribution board(s) will be for Openreach use only. • Where more than one Bay is provided, a 150mm cable tray of sufficient length to traverse the Bays (i.e. to allow inter-Bay cabling) will be provided for the exclusive use of the CPs occupying the Bays.

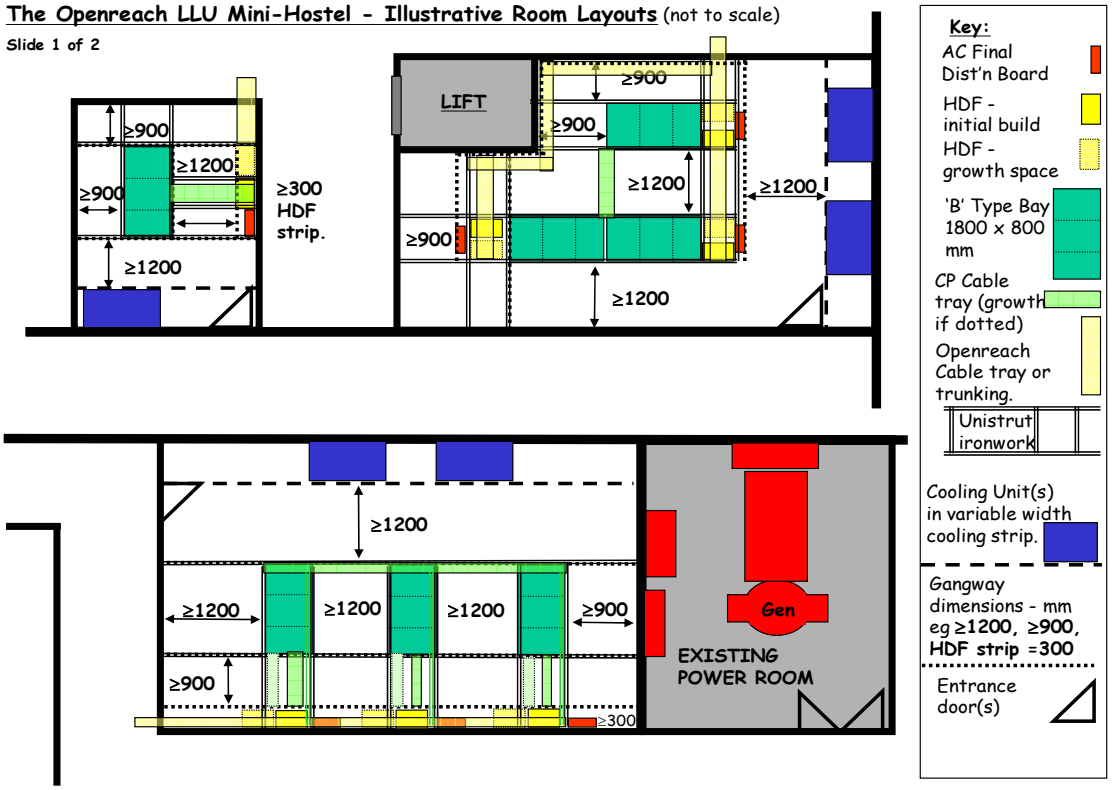
	Openreach will not undertake management of the LLU CPs cable tray(s) or basket(s). • CPs provided cabling (i.e. between racks and HDF) is the responsibility of the CPs. Standardisation of HDF locations with respect to Bays will not always be possible. • Where the HDF is not located at the end of the Bay (eg is wall mounted) Openreach will, for safety reasons, provide a basket of ~150mm width from the HDF position to the edge of the Bay. Similarly for AC power final distribution, a 100mm tray will be provided to allow ac cabling from a wall mounted distribution board to the edge of the Bay. • To minimise build cost, Openreach will not provide cable basket or tray over individual Bays to allow inter-rack cabling within the Bay.
Internal Ties	• Initial provision of **200** pairs for each Bay (i.e. 2 x 100pr / 0.5mm) terminated at the HDF (defined below). The pairs initially provided will terminate at the exchange side of the MDF and will enable cross-frame jumpering to the relevant local loop pair comprising the Metallic Path Facility (MPF). The initial provision does not cater for line sharing and CPs will need to order additional ties for this purpose. Such ties must terminate on the line side of the MDF. Openreach will not undertake 'same side jumpering' on conventional MDF's as this causes jumper field congestion. NOTE: It is intended that 'Krone LSA-PLUS® NT 10 pair Disconnection Modules' will be used as the standard termination. • Openreach will provide sufficient cable runway capacity for initial internal tie provision plus growth in ties up to the maximum capacity of each installed HDF (ie up to 16 x 100pr cables). • Additional tie pair cables (i.e. units of 100pairs) can be ordered separately 'in-life'. • The identity of each tie cable will be made available following acceptance of the CP order to build. It will be necessary for the Openreach 'Build' team to arrange for the correct labelling of tie cable ID's to each Bay and at the corresponding MDF positions.
HDF – **Handover Distribution Frame**	• Each Bay will be assigned **two** spaces for HDF rack positions. • **One** HDF rack per Bay will be provided as part of the build. Openreach will use the vertical furthest from the Bay for initial internal tie pair termination and install from the bottom up. The HDF will be known as the "Openreach LLU HDF 1A" (Krone UK Kit 6426/1/207/00 – this comes with 50 x 10pr NT modules, the low cost of which and ease of subsequent tie provision make a supply line change unattractive). • CPs will be able to request additional HDF capacity. • The Openreach LLU HDF 1A will be based on the Krone VtCOM frame (twin bar system) as this gives CPs the ability to also terminate backhaul fibre and co-ax on the same rack (if required) and has capacity to terminate up to 800 internal tie pairs on a single vertical. The other vertical may be used by the relevant CP to terminate cabling from installed equipment. For CPs intending to simply 'overcable' to the HDF then up to 1600 tie pairs can be terminated on the one HDF rack. • The total usable length of the mounting rails for each vertical is approx.1665mm.

Lighting	• Openreach provides lighting to common areas at 400 Lux minimum at floor level. • Emergency lighting to meet building regulations where appropriate.
Cablelink (backhaul)	INFORMATION ONLY – BACKHAUL NOT PART OF HOSTEL ROOM BUILD – TO BE ORDERED SEPARATELY. • Cablelink (backhaul) services can be by either Openreach or self provided cables. Details in the Industry product manual. (*Note: It is recognised that in some circumstances during the Plan & Build period for an Openreach LLU Hostel an CPs Backhaul requirements may change. CPs must assess any impact on the time-scales for delivery of this Backhaul in requesting such a change)*
Bay labelling & information	• At each Bay will be affixed by Openreach a sign or durable label which shows the identity of the Bay. The CPs occupying (a) Bay(s) will clearly display within the Bay the 24-hour contact telephone number of that CPs. • CPs will not be permitted to display any other signage apart from that required for health and safety reasons within the confines of the Bay. • Openreach will provide relevant information common to all users within each Hostel room. For the avoidance of error, the Hostel and Bay numbering system to be used is as follows: e.g. **ESMOR 3 2B** Where: **ESMOR** is the MDF Site ID (in this case Edinburgh Morningside) [Space] **3** denotes Co-location room 3 (Hostel or Bespoke) – Openreach defined. [Space] **2** denotes Bay number 2 – Openreach defined – from floorplan. **B** denotes a Type B Bay. *For information only: A 'Bespoke' co-location room uses the '0' (zero) character in place of the Bay number – e.g.* ***ESMOR 5 0*** *tells us that co-location room 5 at Edinburgh Morningside TE is a 'Bespoke' co-location room.*
Waste packaging and materials	• CPs may not leave waste materials within Bays or common areas. All waste must be removed from the site by the CP immediately following use.
Use of BT welfare facilities.	• Only available if directly accessible from the CPs building entry route. • No CPs specific parking facilities will be provided on site.
Communications	• CPs may order PSTN lines from BT - these are not provided as part of the standard hostel product.

Document History

Date	Status	Author	Details
10/01/2007	Issue 1.1	Martin Edwards	Document revised to Openreach branding. No material changes made to content or structure.

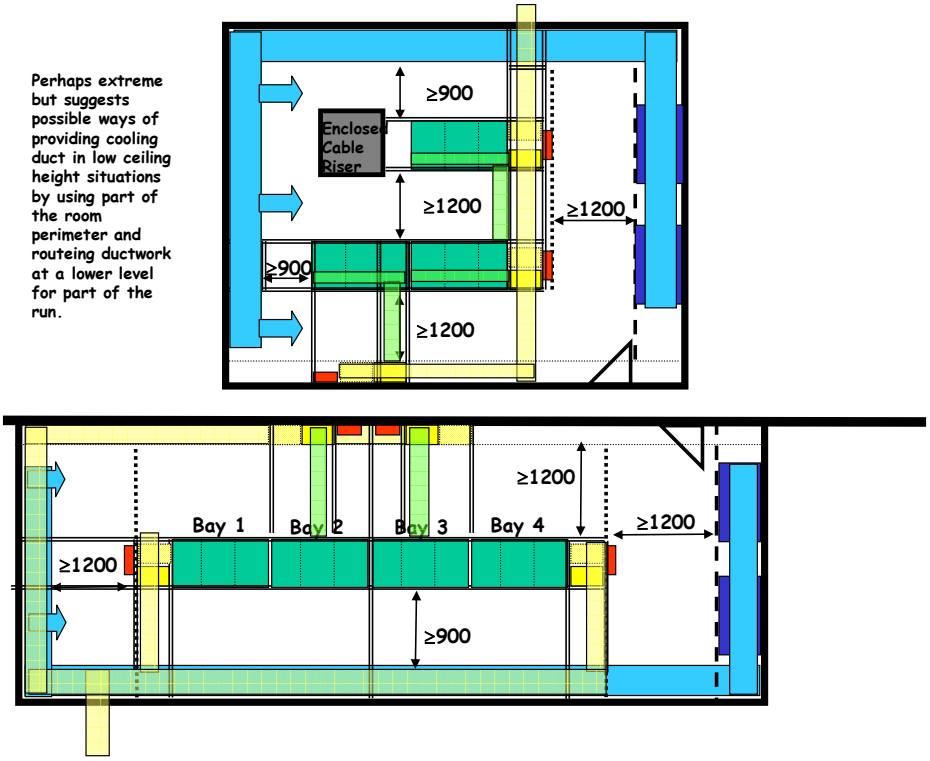
Appendix A: Potential Options for Mini Hostel Room Layouts



The Openreach LLU Mini-Hostel - Illustrative Room Layouts - cont. (not to scale)

Slide 2 of 2.

Perhaps extreme but suggests possible ways of providing cooling duct in low ceiling height situations by using part of the room perimeter and routeing ductwork at a lower level for part of the run.



Key:

- AC Final Dist'n Board
- HDF - initial build
- HDF - growth space
- 'B' Type Bay 1800 x 800 mm
- CP Cable tray
- Openreach Cable tray or trunking.
- Unistrut ironwork
- Openreach Cooling Unit(s) in variable width cooling strip
- Gangway dimensions - mm eg ≥1200, ≥900, HDF strip =300
- Entrance door(s)