all gaps between frames and structural openings to be adequately sealed with propriety sealant all opening sashes, doors, and access hatches etc. to be draught sealed. services and joists penetrating external walls to be adequately sealed with a propriety sealant or

provide 300mm fibreglass insulation to back of trap door trap door to be fitted with a compressible

insulated hatches to unheated valves to be hinged and bolted to compress draught seal at perimeter

where a heat alarm is mounted on a ceiling, it should be located so that its sensitive element is not less than 25 mm or more than 150 mm below the ceiling

fire protection all steelwork to be painted with hamron fire paint or similar approved to achieve 60mins fire protection

draught sealing

control on completion provision of smoke alarms and heat alarms smoke alarms and heat alarms should be interconnected so that they all give an audible alarm when

the maximum number of smoke alarms and heat alarms which may be interconnected should not

a back-up power source to each smoke alarm and heat alarm should be provided by either - (i) a

smoke alarms and heat alarms should be permanently wired to either - (a) a regularly used lighting

alarms and heat alarms; and (iii) where a residual current device is used - is not connected to a

circuit; or (b) a circuit which – (i) is separately fused at the distribution board; (ii) serves only smoke

smoke alarms and heat alarms may operate at a low voltage via a mains transformer. the cable for the

power supply to, and interconnection of, the smoke alarms need not have special fire-survival

a smoke alarm or heat alarm should be located so that it is – (a) either on a ceiling and not less than

300 mm from a wall or light fitting, or where designed for wall mounting on a wall and not less than 150 mm, or more than 300 mm from the ceiling and the sensitive element should not be below the level of

a door opening; (b) not less than 300 mm from, and not directly above, a heater or an air conditioning

where a smoke alarm is mounted on a ceiling, it should be located so that its sensitive element is not less than 25 mm or more than 600 mm below the ceiling.

ntilator; (c) on a surface which is normally at the ambient temperature for the space it bounds; and

above the floor except in the case of a roof window where the lower edge of the window opening may be not less than 600 mm above the floor. automatic fire detection and fire alarm systems dwellinghouse should be provided with either - (a) smoke alarms complying with bs 5446-1 and a heat

alarm or alarms complying with bs 5446-2 or (b) an automatic fire detection and fire alarm system

n the principal habitable room and a heat alarm or alarms in every kitcher

any one of them is activated.

exceed that given in the manufacturer's instructio

primary or secondary battery; or (ii) a capacitor

installation of smoke alarms and heat alarms

(d) easily and safely accessible.

esidual current device which is also used by any other circuit.

omplying with bs 5839-6 of at least grade d category Id2 standard including a smoke alarm or alarms

f applicable, installation and commissioning certificate for fire alarm system to be forwarded to building

emergency egress windows and (b) have a clear opening that is at least 450 mm high and at least 450 mm wide. the lower edge of the window opening should be not less than 800 mm and not more than 1100 mm

arrival on site, calculations to be submitted by keystone technical department an emergency egress window should - (a) have a clear opening that is not less than 0.33 m2 in area;

provide lateral restraint at gable and ceiling level using 30x8mm m.s. straps at 2m crs. carried over 3no. rafters/joists with solid bridging suppor seystone heavy duty lintel calculations/structural certificates to be forwarded to building control prior to certificate of authenticity from lintel manufacturer to be forwarded to building control on completion.

where the distance between joists is greater than 3 times the depth of the joists. steel purlins to have 100x38mm wallplate bolted on top

joists supporting bath to be doubled. floor joists spanning in excess of 2.5 m should be strutted by one or more rows of solid or herringbone strutting in accordance with table 4b.4. solid strutting should be at least 38 mm timber thickness extending at least 0.75 times the depth of the sists. herringbone strutting should be of at least 38 mm x 38 mm timber size but should not be used

should be marked accordingly timber to be clearly marked dry or kd - kiln drie end of beams to rest on 100mm 1:2:4 concrete padstone timber to be clearly marked dry or kd.

strength class of timber to be in accordance with bs 5268 part 2 1996 either c16 or c24 and timbe

structure all structural timbers to be dried / kiln dried and so marked on site.

all structural timber to be pressure impregnated with preservative prior to arrival on site

hat they are to be compliant with the relevant harmonised technical specification

relevant to that product and proof of compliance with the cpr for any individual product is to be provided to the architect as construction progresses all construction products used are to carry the 'ce' mark and the contractor is to produce to the

scaffolding scaffolding shall be provided solely at the risk of the contractor building products & materials all products used are to comply with the eu construction products regulation (no. 305/2011 - cpr) in

health & safety af2 form is to be submitted by the contractor contractor to familiarize themselves with site, responsible for site safety, security, protective wear, scaffolding, etc. in line with good practice and relevant legislation he safety, health and welfare at work [construction] regulations 2013 are to be taken into account. see 'guide for contractors and project supervisors carrying out construction work on private domestic dwellings' which outlines the requirements of the regulations relating to contractors working on

the contractor will be expected to carry out the role of pscs.

domestic dwellings.

the contractor is reminded of their liability to ensure due care, attention and consideration is given in regard to safe practice in compliance with the health and safety at work act 1974. site safety safety, health and welfare at work [construction] regulations 2013 to be taken into account in the construction of the works.

health & safety

pads to maintain medium duration. all electrical works to be in accordance with i.e.e. regulations and to be installed by a registered

all electrical work to fully comply with bs 7671:2008, & the latest edition of iee regulations. all smoke detectors to be linked in series, on protected / separate circuit, all to be inter connected, with battery back up, & audible warning when power is switched off. all electrical installations sited within medium fire duration (double sheeted) walls to utilise intumescent

all discrepancies and lavouts to be checked on site, any discrepancies between dimensions / drawing / documents / site as found to be directed to the architect's attention and any alterations agreed before proceeding on site. electrical

all dimensions are in millimeters relevant local authority, health & safety af2 and service notifications are the contractor's responsibility save for building regulations commencement notice, which will be submitted by the architect on

standards of the most recent building regulations. where work commencing prior to building control approval being granted the contractor to liaise closely with local building control officer and gain his/her approval to all areas of construction all electrical works to be in accordance with i.e.e regulations and to be installed by a registered

he local building control officer. contractor to complete all notices required under building regulations (ni) 2012 for inspection of work as contract proceeds. all materials to be installed in accordance with manufactures recom all products & materials specified are for informational purposes only, contractor may wish to use similar products provided they are acceptably equivalent to those specified and meet the minimum

the client or the contractor shall not permit any changes to this drawing without notification to the architectural consultants, building control officer or planning authority all construction to be in accordance with relevant building regulations (ni) 2012 & to the satisfaction of

all dimensions in millimeters unless otherwise stated. the contractor commencing works prior to all approvals being received does so entirely at his/her own

nanufacturing any item all dimensions to be checked on site prior to ordering of materials all dimensions to be verified on site

errors arising from scaling drawings will not be accepted. the contractor shall notify the architect of any discrepancies with the documents/drawings prior to worked to figured dimensions only with all dimensions to be checked on site prior to ordering or

hese notes are for general guidance only and their primary function is to assist local authority officers in determining building regulation applications. this specification should be read in conjunction with any planning drawings along with any engineers details and requirements. it is the contractor and client's responsibility to ensure that the contractor is working to the approved

all materials to be installed in accordance with manufacturers recommendations.

architectural consultants, building control officer and planning authori all construction work to be carried out in accordance with all relevant british standards, ce standards hbc technical standards, codes of practices, building regulations, building regulations (n.i) 2012 and to the satisfaction of the local building control inspector whether detailed on drawing or not. contractor to complete all notices required under building regulations for inspection of work as contract

entirely at their own risk, and where they do, they should liaise closely with the local building control inspector and gain their approval to all areas of construction the client or the contractor shall not permit any changes to this drawing without notification to the

all dimensions to be verified on site prior to ordering or manufacturing any iten where the contractor commences work prior to all building control approvals being granted, they do so

general notes

work to figured dimensions only

water heating to be on seperate zone. I heating and hot water systems to be commissioned in accordance with the procedure given in Iclg publication "domestic heating compliance guid a dwelling the output of a space heating system shall be controlled by - room thermostats and tatic radiator valves to control the temperatures independently in zones that require differer tures (such as separate sleeping and living areas); and shall not prevent the use of a radiate a heat leak in a solid fuel system; where heat is provided by a boiler, other than a solid fuel boi operates only by natural draught, a time clock shall be provided to control the periods wherein

ninimise boiler cycling - provide wall thermostat in conjunction with hw tank thermostat (location to

the building fabric should be constructed so that there are no reasonably avoidable thermal bridges in

significant reductions in thermal performance can occur where the air barrier and the insulation laye

are not in contact with one another and there is a cavity between them that is subject to air movement.

there is not a problem where the space between the air barrier and the insulation layer is filled with

linear thermal transmittances and temperature factors should be calculated using the methods and

it should be demonstrated that the specified details achieve a temperature factor that is no worse than

the performance given in bre information paper ip 1/06 assessing the effects of thermal bridging at

the building fabric shall be constructed such that there are no readily avoidable thermal bridges in the

insulation layers caused by gaps within the various elements, at joints between elements, and at the

the building fabric shall be constructed to minimize air leakage through the new parts of the therma

the building shall be constructed to details to give a level of performance when assessed in accordance with bre ip 1/06: 'assessing the effects of thermal bridging at junctions and around

the builder shall demonstrate that an appropriate system of site inspection is in place to ensure that

to reduce air infiltration, draught seal windows and doors, loft hatches and draught seal around joist

the building fabric shall be constructed (a) in accordance with the accredited details in dolg publication

fixed external lighting shall (a) have a maximum output of 100w per fitting and automatically switch off

only be fitted with lamps having a luminous efficacy greater than 40 lumens per circuits - watt.

- (i) when there is adequate daylight; and (ii) when not required at night; or (b) have sockets that can

fixed internal low energy lighting shall be installed in the most frequented areas in a dwelling but where

they are not likely to be replaced, i.e. rooms such as halls, landings, bedrooms etc. and there shall be

intermittent extract fans other than cooker hoods should be installed as high as is practicable and

cooker hoods should be 650 mm to 750 mm above the hob surface (or installed in accordance with the

where fans and background ventilators are provided in the same room they should be a minimum of

background ventilators should be located in all rooms with external walls, with at least 5000 mm2

for a hinged or pivot window that opens 30° or more or for parallel sliding windows (e.g. vertical slidin

sash windows), the "height x width" of the opening should be at least 1/20th of the floor area of the

for a hinged or pivot window that opens between 15° and 30°, the "height x width" of the opening part

to ensure good transfer of air throughout the dwelling, there should be an undercut of minimum area

this should be achieved by making an undercut of 10 mm above the fitted floor finish, or by a 20 mm

intermittent extract may be operated manually and/or automatically by a sensor (e.g. humidity,

any automatic control should have an override facility to allow the occupant to turn the extract on

in a room with no openable window (i.e. an internal room) an intermittent extract fan should have an

in rooms with no natural light, the fans could be controlled by the operation of the main room light

where manual controls are provided, they should be within reasonable reach of the occupants, where

a flue should be checked at completion to ensure that it is free from obstructions, satisfactorily

where the building work includes the installation of a combustion appliance, all of the tests should

include the flue pipe and the gas-tightness of the joint between the flue pipe and the combustion appliance outlet. a spillage test should be carried out with the appliance under fire.

where a new or replacement combustion appliance, not designed solely for cooking purposes, is

stalled in a dwelling, a carbon monoxide detector/alarm should be provided in the room where the

carbon monoxide alarms should comply with bs en 50291 and be powered by a battery designed to

the carbon monoxide alarm should be located – (a) on the ceiling at least 300 mm from any wall or, if it

is located on a wall, as high up as possible (and above the height of any doors or windows) but not within 150 mm of the ceiling; and (b) between 1000 mm and 3000 mm horizontally from the appliance.

ce (XX mm) as defined by testing to V 1443: 2003 or 25 mm, whichever is the greatest

 $\rightarrow k$

→ K^{dimension} "XX"

gas-tight and constructed with materials and components of sizes that suit the intended application.

s considered reasonable, pull cords, operating rods or similar devices should be provided

humidity controls should not be used for sanitary accommodation as odour is the main pollutant

for example, this is equivalent to an undercut of 10 mm for a standard 760 mm width door.

ndercut above the floorboards, or other surface, if the finish has not been fitte

overrun of at least 15 minutes except where it is controlled by a humidistat.

background ventilators may be either manually adjustable or automatically controlled.

background ventilators should be located to avoid draughts, typically 1.7 m above floor level.

quivalent area in each habitable room and 2500 mm2 equivalent area in each wet root

5,000mm2 background ventilation via titon trimvent select xtra xs13.

should be at least 1/10th of the floor area of the room.

occupancy/usage, pollutant release

condition of combustion installations at completion

carbon monoxide alarms

operate for the working life of the alarm

BS EN 1856

dimension "XX" K

appliance is located.

see para 2.37

600 mm2 in all doors within the dwelling above the floor finish

ccredited construction details for part f or (b) to details that give an equivalent level of performance

conventions given in bre report br 497 conventions for calculating linear thermal transmittance and

the edges of elements such as those around window and door openings.

junctions and around openings in the external elements of buildings.

edges of elements such as those around door and window openings.

ne insulation layers caused by gaps within the various elements, at joints between elements, and at

central heating and hot water systems to be designed , installed and commissioned for the purposes of conservation of fuel and power and handed over in efficient working order.

ing services compliance guide.

the existing heating system is to be extended into the new extension (via new gas combi boiler with nced flue) and installed in accordance with the provisions and standards given in the domestic dwellings over 150m2 to have 2 seperate heating zones with independent time and temperature

heating system & controls

eating system operates.

solid material such as in a masonry wall.

continuity to limit thermal bridging and air leakage

openings in the external elements of buildings.

when assessed in accordance with bre ip 1/06.

ends and service pipe penetration

fixed external & internal lighting

not less than - 100% of dwelling

location of intermittent extract fans

manufacturer's instructions)

500 mm apart.

rapid ventilatior

air transfer

background ventilators

preferably within 400 mm of the ceiling.

n hall area).

temperature factors.

air infiltration

thermal bridges

new storm & foul drainage to be 100mm diameter wavin min 600mm below ground level connecting to existing mains new manholes to be wavin pvc type in positions as shown with wavin pvc pipes laid to uniform falls

1:50 bedded and surrounded in granular material with min 600mm cov all pipes to be laid, on 100mm thick bed of selected granular material to bs en 752:2008, true to line and to regular, even and proper falls

gulleys to branch connections over 2m to be roddable type.

soil vent pipes to terminate min 900mm above window head height with plastic cage

all drainage under ground floors to be 100mm diameter

all appliances to be fitted with deep seal traps. all internal and external drainage to be executed and tested to the entire satisfaction and direction of

the district & regional council. manholes to be constructed so as to comply with bs en 752:2008 all soil waste pipes to be 110mm

diameter pvc-up, manufactured and installed to bs en 13297 with 1:50 fall. no drainage is permitted to pass below foundation level where within 1m of foundation.

aav (durgo valve) required at kitchen sink.

air admittance valves should be installed in accordance with the recommendations in bs en 12380:

access for cleaning blockages in traps

if a trap forms part of an appliance the appliance should be removable.

depth of pipe cover

the ground levels.

the depth of cover for flexible pipes used in conjunction with the bedding given in diagram 3.3 should

the side cover for all types of pipe should be 150 mm or the diameter of the pipe, whichever is the

the depth of cover will normally depend on the levels of the connections to the drain, the gradient and

a change of pipe material, bedding or backfilling may obviate the need for special protection against ground loads, and guidance is given in bs en 752 and bs 8301.

where a rigid pipe of -(a) less than 150 mm diameter has less than 300 mm depth of cover; or (b) 150

either 100 mm or the diameter of the pipe, whichever is the greater, in thickness and have movement

where a flexible pipe has less than 300 mm depth of cover under an area other than a vehicular area,

should have concrete paving slabs laid as bridging on granular or other flexible filling at least 75 mm

where a flexible pipe has less than 600 mm depth of cover under a vehicular area it should have a

a drain which runs under a building should be surrounded by at least 100 mm of granular or other

drain which passes through a wall or foundation should either - (a) pass through an opening giving

ible joints within 150 mm and rocker pipes of maximum length 600 mm as shown in diagram 3.6(b

s within 1 m of the foundations, be filled with concrete up to the level of the underside of the

foundations as shown in diagram 3.7(a); or (b) where the trench is more than 1 m from the

oundations, be filled with concrete to a level, below the level of the underside of the foundations

where a drain is to pass under a foundation, be supported on piles, or where the ground is unstable

an access point should contain the foul water under working conditions, restrict the entry of ground

an inspection chamber or manhole should have a half round channel with any branch drain

discharging into the channel at or above the level of its horizontal diameter and at not more than 90° to

the direction of flow. where the angle of a branch drain is more than 45° a three-quarter section branch

the channel and any branches should be benched up, at least to the top of the outgoing drain, at a

every external access point should have a removable non-ventilating cover of durable material and

every access point within a building should have a mechanically fixed airtight cover unless the drain

where the operating temperature of domestic hot water in the storage vessel in a dwelling is capable

of exceeding 80 °c under normal operating conditions (a situation that may occur in vessels used as

heat stores and those connected to solar heat collectors or solid fuel boilers that do not have

tervening controls between the boiler and the vessel containing the hot water) the outlet from the

storage vessel should be fitted with a devic, such as an in-line hot water supply tempering valve in

the in-line hot water tempering valve should be set/adjusted to ensure that the temperature supplied to

the hot water supply temperature to a bath should be limited to a maximum of 48 °c by the use of an

n-line blending valve or other appropriate temperature control device, with a maximum temperatur

the acceptability of in-line blending valves can be demonstrated by compliance with the relevant harmonised european standard such as bs en 1111 or bs en 1287 to demonstrate that the maximum

temperature of 48 °c cannot be exceeded in operation and that the product will fail-safe (i.e. not

in-line blending valves and composite thermostatic mixing valves (tmvs) should be compatible with the

the length of supply pipes between in-line blending valves and final outlets should be kept to a

minimum in order to prevent colonisation by waterborne pathogens. where intermittent use of a bath is

e pipes and outlet fittings. this should be configured and operated in such a manner that prevents

anticipated, consideration should be given to high temperature flushing to allow for pasteurisation of

the surface of an approach available to a wheelchair user should be firm enough to support the weight of the user and their wheelchair and smooth enough to permit easy manoeuvre. it should also take

account of the needs of people using walking aids. loose laid materials, such as gravel or shingle, are

the width of the approach, excluding space for a parked vehicle, should take account of the needs of a

where the point of entry is at the boundary it should have an unobstructed width of not less than 900

a level approach should have - (a) a surface which is firm and even; (b) an unobstructed width not

a level threshold should be provided at the principal entrance or alternative entrance even where the

the principal entrance to a dwelling or the common entrance to a block of dwellings should have a door with a minimum clear opening width of not less than 775 mm and a level threshold.

he access to the principal entrance to a dwelling or the common entrance to a block of dwellings

should be - (a) level for a distance of not less than 900 mm; and (b) at or about the level of the floor of

where access is by an alternative entrance the above provisions should apply to that entrance and not

wall mounted socket outlets and switches (other than isolators) in the entrance storey, and where

appropriate the principal storey, should be located not more than 1200 mm or not less than 450 mm above the floor level.

safe breakage is defined in clause 4 of bs en 12600 and also in clause 5.3 of bs 6206. both standards

are based on an impact test which requires the result of the impact to be limited to creating – (a) in relation to bs en 12600 for glass – (i) a small clear opening only, with a limit to the size of the detached

articles; and (ii) disintegration, with small detached particles; and (b) in relation to bs 6206 for plastic

glazing suitable for installation in a critical location should satisfy the test requirements of - (a) for

where the glazing is installed in a door or a door side panel and has a pane width of more than 900

mm, it should satisfy the test requirements of – (a) for glass, class 2 of bs en 12600; or (b) for plastic

control for a window, skylight or ventilator should be within safe reach of a person standing on a floor

(or other permanent stable surface) when considering safe reach, a small recess such as a window

where reach is unobstructed the control should be not more than 1.9 m above floor level (see diagram

where reach would be obstructed the control should be lower, for example, if the obstruction is a

kitchen unit 900 mm high and 600 mm deep, the control should be not more than 1.7 m above floor

where the control cannot be positioned within safe reach of a person standing on the floor (or other

where there is a danger of a person falling through the opening whilst opening, closing or adjusting a

window, skylight or ventilator, a suitable opening limiter should be considered or the opening guarded

nanent stable surface), a safe means of remote operation, such as a mechanical or electrical

the cord of a pull cord switch should terminate not more than 1200 mm above the floor level

glazing sheet material, breakage resulting in separate pieces that are not sharp or pointed

glass, class 3 of bs en 12600; or (b) for plastic glazing sheet material, class c of bs 6206.

equal to the distance from the foundations less 150 mm as shown in diagram 3.7(b).

specialist advice should be sought on the protective measures needed

water and rainwater, and be constructed of a material given in table 3.6.

slope of 1 in 12 and the benching should be rounded with a radius of at least 25 mn

any manhole deeper than 1.0 m should have metal step irons or a fixed ladder.

t least 50 mm clearance all round as shown in diagram 3.6(a); or (b) be built in with, on each side

a drain which is at a level lower than the foundations of a building should either - (a) where the trench

r more diameter has less than 600 mm depth of cover, it should be surrounded with concret

if the depth is too little then imposed loads, agricultural activities, etc., or frost could cause damage.

if the depth is too great then the weight of the backfilling could cause damage

e - (a) a minimum of 600 mm under a vehicle area and 300 mm under other areas; and (b) a

maximum of 10 m under all areas.

<u>special protection – ground loads</u>

joints, at not more than 5 m centres

reinforced concrete slab laid as bridging in a similar manner

above the top of the pipe.

special protection - settlement

flexible pipes should be wrapped in polythene

construction of access points

should be used.

suitable strength.

itself has a watertight access cover

ccordance with bs en 15092.

reducing the risk of scalding at bath

stop and a suitable arrangement of pipewe

discharge water above the maximum temperature

ources of hot and cold water that serve them.

inadvertent high temperature use.

not suitable for an approach

wheelchair user, or a stick or crutch user

less than 900 mm; and (c) a slope not steeper than 1 in 20.

where a level approach has a crossfall it should not exceed 1 in 40

to the principal entrance or the common entrance to a block of dwellings.

external approach

level approach

access into the dwelling

principal entrance

afe breakage

location of controls

eveal may be ignored.

level (see diagram 4.1(b))

system should be considere

to comply with part h.

pproach to that entrance is stepped.

heights of outlets and switches

lazing sheet material, class b of bs 6206.

such valves should not be easily altered by building users.

prevention excessive domestic hot water temperatures

the domestic hot water distribution system does not exceed 60 °c.

flexible filling.

all other traps should be fitted directly after the appliance and should be removable or be fitted with a

