A GRP (fibreglass) roof-covering will be applied in situ to the 5.5mm-thick plywood deck forming an integral part of the Celotex Tempchek Deck panels, resulting in a monolithic weather-surface without joints and with a hard Detail of proposed junction between gelcoat finish. The GRP roof-covering will also be dressed at least 150mm up each of the perimeter walls (i.e., the house rear wall and the parapet wall sections) over a triangular softwood fillet, and will be lapped from above as shown by leadwork- and/or other non-ferrous metal flashings notched into the masonry coursing. In addition new roof and existing balcony, the GRP roof-covering will be similarly dressed up the kerbs of the roof-domes as shown. Drainage of the new roof section will be assisted by a modest 1:60 slope to the south side - achieved by means viewed from north. of tapered firring pieces secured over the horizontal roof-joists - which will enable surface-water to flow efficiently to at least two approx. 200mm-wide water-outlets piercing the foot of the parapet wall and discharging via spouts to hoppers at the head of external down-pipes. These outlets, each to be formed as a simple one-piece GRP (fibreglass) moulded U-section channel with a built-in fall of some 1:10 - will be supported within the wall structure by top flanges that will sit on a mortar bed directly below the through-wall metal flashing and the concrete lintels that will carry the top courses of the wall masonry and the coping-stones; the sloped base of the outlet will be similarly supported by mortar flaunching laid over stepped masonry within the wall. At the point where each GRP Re-mounted existing handrail and balusters, New coping sections are to be wide enough to span both leaves outlet emerges from the wall, its upper part will be cut back flush with the render face; this will leave the lower secured to encapsulated timber pads via of the parapet wall and to overhang each rendered face with a part to project as a shallow angled spout or trough above the hopper that will receive its discharge. The use of stainless steel brackets or sockets and screws. stand-off drip-forming groove to its underside as shown, that will simple one-piece moulded GRP water-outlets in conjunction with a GRP roof-covering will enable both elements prevent water migrating by capillary action from the coping to the to be bonded together seamlessly, thereby eliminating the need for overlapping joints involving leadwork or zinc face of the building underneath. The top of the coping may also slope inwards as shown, to direct water away from its outer face. Face view of a one-piece GRP water-outlet 5000 and spout, positioned below the through-wall metal flashing, with wall above carried on 2 no Supreme Concrete P100 or equivalent 4350 65x100mm reinforced-concrete lintels. One of two proposed Cox Dome 2000 1800x1800mm roof-lights with fixed polycarbonate triple glazing, an insulated kerb and trickle ventilation. This product has an overall U-value of some 1.37 W/m²K - better than the current Building Regulations minimum requirement of 1.6 W/m²K for windows and Ends of side parapet walls. One-piece moulded GRP continuous through-wall rainwater outlet, with its shoulders resting on a mortar bed over brickwork immediately beneath the through-wall metal flashing and the two lintels over the approx. 250mm-wide gap provided in R.C. lintels in wall over GRP water outlet. the parapet wall masonry for roof drainage. The bottom of the Cut aggregate GRP corner flashing Through-wall metal flashing outlet is carried by flaunching off stepped masonry within the built into brick coursing. 100x215x440 dressed down over min. 150mm Water-spout over rain-water hopper. wall. The shading shows the area of bonding between the GRP block(s) laid GRP roof-covering upstand. roof-covering upstand and the inside of the outlet channel. on their sides. The external end of the GRP outlet is shown cut to finish flush with the face of the render coat for most of its depth, except where it forms a shallow open spout with an approx. 1:10 fall to Roof-domes are to sit on their own reverse GRP roof surface. discharge into a hopper feeding a down-pipe. firring-pieces to offset the 1:60 drainage slope. New GRP roof surface. Hanger brackets within masonry mortar coursing. Ceiling and light-well surfaces are to be lined with 15mm-thick plasterboard finished with a 3mm wet plaster skim coat. RECEIVED Aircrete coursing bricks used for 75x220mm transverse timbers carrying new roof hanger height adjustment etc. 7 0. 04. 2014 1800 Weep-holes over openings Broken lines show Simpson Strong-Tie JHA450 adjustable RECEPTION The Celotex TD4126 "warm-deck" insulation panels are to in conjunction with cavity trays hangers or equivalent (see the nailing specifications in the sit on a min. 12.7mm-thick plywood sub-deck secured to the manufacturer's literature) carrying each light-well trimmer off as required. a full-span flitch-beam. See also the plan view of the new roof firring pieces that will create a 1:60 slope over the roof-joists. All roof-joists and flitch-beams, of 220mm depth, are to be carried off the This sub-deck is designed to provide an uninterrupted fixing structure and the separate A4-format structural calculations. external walls by Simpson Strong-Tie JHM or HJHM masonry-supported surface which will remove the need to locate the exact centres Galvanised steel beads at edges hangers installed within the blockwork coursing. Use JHM hangers to of the individual timbers when attaching the insulating panels. Dotted lines show Strong-Tie JHA450 hangers connecting the Level of lintel over existing carry the joists, and heavier-duty HJHM hangers to carry the flitch-beams. of rendered panels. short interrupted roof-joists to the top or bottom light-well trimmer. Use a Catnic CX90/100 heavy-duty open-backed pressed-steel lintel Weathering of joint between the new and existing buildings. or equivalent, with at least 150mm-long end bearings, over the narrower bi-fold door opening, and a Catnic CXL290 or equivalent over the wider The above drawing shows both side parapet walls ending a short distance from the face of the existing balcony, and the formation of a timber kerb or cill at this point with an arris-rail which will rise some 150mm above the of the two openings. highest point of the gently-sloped new extension roof. This will separate the roof from the existing balcony deck, Specifications for new roof-timbers and flitch-beams. but it seems likely that the junction between the existing and new building could easily still remain susceptible to water penetration unless a homogeneous weather-surface is provided to cover both. It is therefore proposed that Finished lintel level approx. 2050mm over floor level. The new insulated cavity wall sections are to consist of an external rendered leaf As shown on Sheet 3 of these plans, each of the two 1800x1800mm roof-openings the GRP covering to the new roof, separating cill and arris rail be continued to cover the balcony deck also as surmounted by glazed roof-domes is to be carried between two full-span flitch-beams of 100mm Fenlite Background aggregate blocks (compressive strength 3.6N/mm², shown. However, this will necessitate the temporary removal of the existing handrail and balusters, the present consisting of 2 no 75x220mm timbers and an 18x200mm flitch-plate, secured together thermal resistivity 0.48 W/mK) or equivalent; a 100mm cavity effectively filled with min. attachment points of which can be expected to involve some penetration of the existing deck or of the adjoining 75mm of Celotex GA4000 insulating board held in place with wall-tie clips, or filled with staggered M16 4.6-grade bolts. These flitch-beams are to be carried off the flank or supporting timbers. The posts carrying the handrail can then be re-mounted over, and secured to, timber pads alternatively with Dritherm 85mm-thick Cavity Slab 32 batts; and a 100mm inner leaf of walls by appropriate masonry-supported hangers as specified above. encapsulated between two layers of fibreglass as shown, which will ensure that no fixings penetrate the common Thermalite Turbo aircrete blocks(compressive strength 2.9N/mm², thermal resistivity weather-surface. 0.11W/mK) or equivalent, finished with 13mm of lightweight plaster. The resulting Between each pair of flitch-beams supporting a roof-opening and a roof-dome, the walls will achieve acceptable U-values of 0.23 W/m²K (using Celotex cavity insulation) short joists above and below the opening will be single 50x220mm timbers at max. 450mm or 0.27 W/m²K (using Cavity Slab batts) that will be better than the minimum current centres spanning between a wall and a trimmer that will form the top or bottom side of the opening, and which will itself consist of double 50x220mm timbers. The short joists will be Building Regulations requirement of 0.28 W/m²K for new walls. carried off the walls by means of masonry-supported hangers, and off the trimmers by adjustable joist-hangers. The trimmers will likewise be carried off the sides of the flitch-In order to prevent thermal bridging, continue the insulated section of the cavity walls together with their cavity filling - up to a level which is at least equal to the height of the beams by adjustable joist-hangers as specified above. roof-covering, as shown above. Note that the insulating blockwork and cavity filling will be fractionally lower than the roof-deck level where they will need to fit below each All other full-span members carrying the roof will consist of single or double 75x220mm timbers at max. 400mm centres, on masonry-supported hangers, as shown in the roofwater-outlet that drains the new roof through the base of the parapet wall. timber layout plan on Sheet 3. All structural timbers are to be of C24 grade, and all nailing of hangers is to conform strictly to the hanger manufacturer's instructions. Appropriate Simpson Strong-Tie hangers and other metal fixings are recommended by name in these plans, and when using other manufacturers' products the builders should satisfy themselves that adequate loading, nailing and application information and guidance is provided. See also the accompanying A4-format Structural Calculations. PLANNING APPLICATION Sheet 5 of 5. CLIENTS AND SITE LOCATION: MR AND MRS SEARCH. THE BOLEYN, 53 HIGH ROAD, HOCKLEY, ESSEX, SS5 4SZ. New floor level to be flush with that of the existing house. PROPOSAL: ERECT A SINGLE-STOREY REAR EXTENSION WITH A FLAT ROOF FEATURING GLAZED ROOF-DOMES BEHIND A PERIMETER PARAPET AGENT: BARRY SKINNER. 16, FOUNTAIN LANE, HOCKLEY, ESSEX, SS5 4SU. Telephone: 01702 - 203750 and 07932 - 741948. e-mail: barryskinner@btinternet.com DRAWING NUMBER 14/0402: 5(5) APRIL 2014. SHEET 5: ROOF- & WALL SECTIONS AND SPECIFICATIONS.

General sections through proposed roof and walls (1:10)