

Timber-Framed Early Buildings in Surrey. A Pattern for Development, c.1300–1650

by

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This analysis of some 750 pre-1650 timber-framed houses in Surrey reveals five major stages in development. It also shows that certain features of plan, framing and carpentry may be typical of the period of building; parish variants are evident, as are influences from nearby counties. The most important new plan-type was the smoke-bay house of c. 1550, when the hearth was confined to a narrow smoke-bay, or a framed smoke-hood was built within the hearth-room bay. No attempt has been made in this survey to analyse later phases of development or improvement to individual houses.

The Domestic Buildings Research Group (Surrey) was formed in 1970, following practical courses at Barford Field Centre under J.T. Smith. He suggested that smaller timber-framed houses were worth recording as well as the larger well-appointed manor-houses. The aim of the D.B.R.G.(Surrey) is to record the early development of Surrey's older houses and to interest owners in their properties. Our surveys, by invitation of the owners, of over 3,500 old buildings in and around the county, has included eighty two-bay medieval cottages, now mostly built round, or re-faced. Some 940 pre-1650 timber-framed buildings have been recorded. This review analyses the structures and characteristic features of six well-defined stages of development from the early medieval period to c.1650 and the advent of brick and stone houses.

The 484 open-hall houses recorded have been subdivided into early medieval (before 1400) (67 examples) and medieval (c. 1400–1500) (417 examples), from which have been selected those with internal jetties (64 examples), and those with a suspended upper floor over one bay of the open hall (42 examples). These houses all have sooted

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rafters over the open halls. Then there are the smoke bays (247 examples) and smoke hoods (47 examples) (c. 1550-1620).

The smoke-bay houses are important, as they display a new house-plan, a new roof-shape (the half hip), and may use the attics for storage which precludes the crown-post roof structure which is not suitable for attics. The clasped-purlin/wind-brace roof is general. With the same plan, after 1600, are timber-framed houses built with brick chimneys c. 1600-1650. These chimneyed houses were at first of similar plan to the smoke-bay house, but there soon developed a revised plan with an outshot along the back and an extra half-storey to provide for better attics.

For this survey only newly-built farmhouses, cottages and manor-houses have been included without details of later additions. Each house differs, but all have the basic characteristics of the building fashion of the period and the monies available. Every stage in development shows some improvement in comfort and each type of house will show one or two examples of a new idea which may become incorporated in later builds.

THE PATTERN FOR DEVELOPMENT

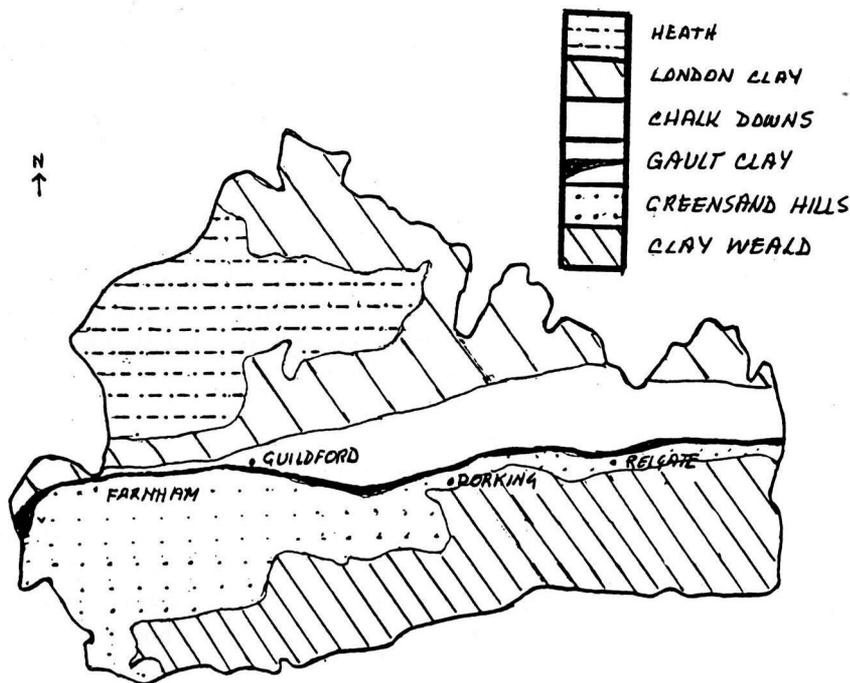


Fig. 1
A simplified geological map of Surrey

Surrey was not a wealthy county in the fourteenth and fifteenth centuries. Farming land was poor. There was much heathland in the north. In the centre the chalk Downs and the high Greensand hills, crossing the county from west to east, were divided by a narrow Gault Clay valley (Fig. 1). Only in the south did the forests of heavy Wealden clay lands provide fuel for iron smelting in Charlwood and Newdigate and glassmaking in Chiddingfold. Ironmasters built good, small houses, which survive, little altered until recently, because when the industry moved to the Midlands and the coafields, the Wealden forests encroached again. Surrey is still the most heavily-wooded county in England and timber was the best building material until *c.* 1650, after which it became increasingly scarce.

Building stone was being quarried at Reigate but it was not good weathering stone. It is used around hearths (see *Leather Bottle*, Nutfield, Fig. 27c). Golden-coloured Bargate stone from the Greensand was used when timber was no longer available. It is not an easy stone to work and needs to be used with brick quoins and dressings.

Surrey extended to London and its furthest point was only a day's ride from the capital, and new ideas. The river Thames to the north formed the natural boundary. Early buildings in south Surrey show influences from Sussex in the predominance of crown-post roofs; whilst the medieval halls of west Surrey have mainly clasped-purlin roofs with wind-bracing which includes some interesting variants. Both roof-types are widespread.

This survey, as its title suggests, shows a pattern for development of Surrey's houses and cottages—each stage of development having perhaps something of the past and maybe a new idea. Only surviving buildings recorded by D.B.R.G. are included in this article. The early houses were constructed by craftsmen to a traditional code of practice and later buildings reflect the growing shortage of both timber and time, and a more standardized building with less local influences.

MEDIEVAL HOUSES IN SURREY (BEFORE 1550)

The basic characteristic of a four-bay yeoman hall-house is a timber-framed building with two central bays, originally open to the roof with sooted rafters. The two end-bays have upper floors. The well is invariably nine feet outside the back door which is in line with the front door. This crossing is at the lower end of the hall. The plan is a rectangle. Smaller houses of two bays have an open hall and one bay with a room over. The three important rooms in a house are the living room with hearth, the service room, and a bedroom. Manor-houses may have a wing, or wings. It is remarkable that there was no change in plan during these early centuries, and that only *c.* 1500 were some attempts being made to control the smoke (Figs 2 and 3).

In these early houses the detail and quality of the carpentry varied, and there were changes in the framing. These houses had mainly hipped-with-gablet roofs, steeply pitched for thatching. Superior houses had chamfers and stops round the wall-plates perhaps, and these were always stepped with a straight run-out stop.

Dates are rare. One house has been dated by historical evidence (see *Early Medieval*, Fig. 11N), and one by dendrochronology (Hazelwood Farm, Chipstead, Fig. 4). Both were near our surmised dates.

Some details in the framing and extra bracing suggest that there was no shortage of timber at an early date. Those houses with long passing-braces in the framing are

		TYPES	TOTALS	ROOFS	TRUSSES	JOWL	FRAMING	STOPS
MEDIEVAL - BEFORE 1550	BEFORE 1400		67					
	OTHER MEDIEVAL		311					
	INTERMEDIATE		64					
	FLOOR JETTY		42					
1550-1620	SMOKE SHUVE		242					
	SMOKE HOOD		47					
1580-1650	CHIMNEY		156					

KEY
100 %

STRAIGHT STEP STOP
CURVED STEP STOP
LONG TONGUE STOP

Fig. 2
Timber-framed houses built before 1650

probably early in the evolutionary sequence. Perhaps only those most carefully built have survived.

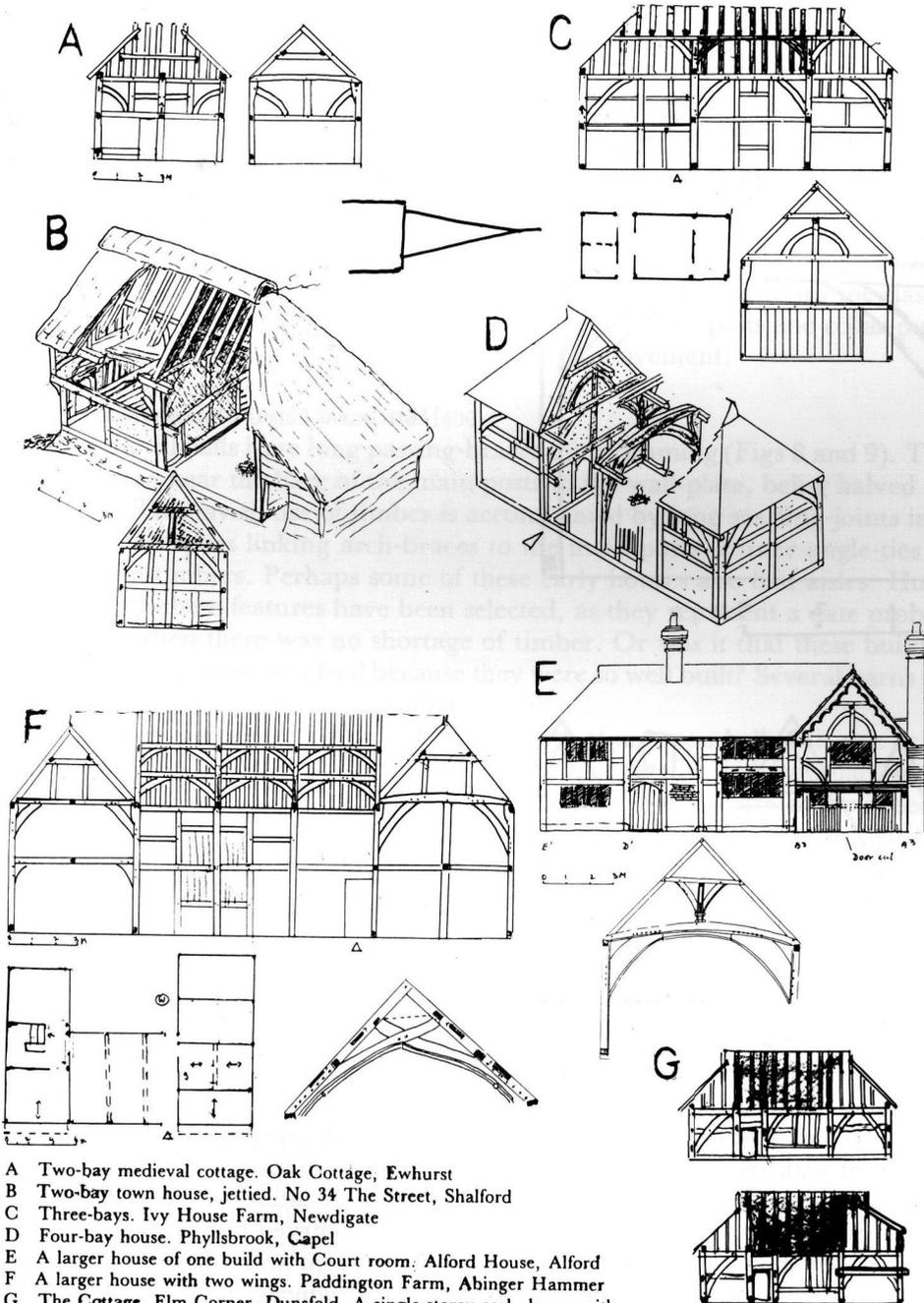
Roof structures have coupled rafters with collars, crown-posts, or clasped purlins with wind-bracing. The latter are found only in south-east England, and are the roof-types which continue into the seventeenth century.

Towards 1500 efforts were being made to control the smoke from the open hearth and houses were being built with one bay of the hall ceiled over. These houses have been grouped together as they are a definite step in the development pattern.

No mention has been made here of the many fine houses recorded and their interesting open trusses. Many old manor-houses survive, sometimes relegated to the status of a home farm, when the family built a new house of brick; sometimes divided into farm workers' cottages, which are now being carefully restored. Many two-bay cottages are preserved within larger buildings. Many have added wings, or new brick façades. This analysis details only the bare outline of a wealth of evidence.

MEDIEVAL ROOFS IN SURREY

There are four main roof-structures over open halls in Surrey (Fig. 5). The simplest is the collar-rafter roof (A) where each pair of principal rafters is linked (coupled) by a collar (45 examples). The crown-post roof (B) has a collar purlin extending the length of the roof under the collars, and which is supported by crown-posts (139



- A Two-bay medieval cottage. Oak Cottage, Ewhurst
- B Two-bay town house, jettied. No 34 The Street, Shalford
- C Three-bays. Ivy House Farm, Newdigate
- D Four-bay house. Phyllsbrook, Capel
- E A larger house of one build with Court room. Alford House, Alford
- F A larger house with two wings. Paddington Farm, Abinger Hammer
- G The Cottage, Elm Corner, Dunsfold. A single-storey early house with added upper floor, when the roof was pushed up to make a half-hip

Fig. 3
Medieval houses

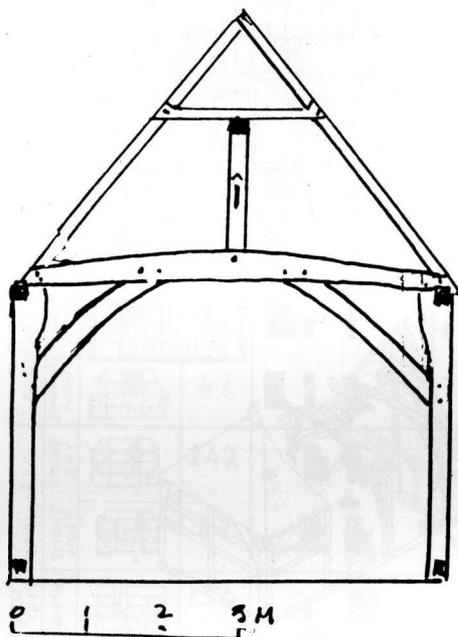


Fig. 4
Hazelwood Farm, Chipstead dated 1481

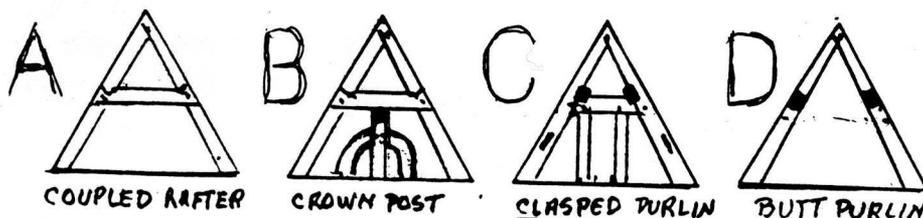


Fig. 5
Types of roof-truss

examples). The clasped-purlin/wind-brace roof (C) has almost as many examples (125); and the butt-purlin roof (D) occurs eight times.

The crown-post roof, over an open hall, is a dramatic central feature. The clasped-purlin roof with two queen-struts up to a collar is perhaps not so spectacular, but wind-braces do add interest. However, there are some interesting variants found in western Surrey with one queen-strut and variously curved bracing. The map and analysis chart show (Figs 6 and 7) the influence of Kent and Sussex in the east and south where crown-posts predominate. Charlwood, Newdigate, Shere, Shamley Green, Guildford and Godalming all show concentrations of crown-post roofs whilst the carpenters in Dunsfold, Woking, Farnham, Thursley and Frensham favoured the clasped-purlin/wind-brace roof-structure.

A single cruck building survives in the west of the county, in Dockenfield, on the Hampshire border. Two other cottages have end-trusses with base-crucks and a half-hipped roof, but internal trusses have clasped purlins; these are in Artington and Hascombe. The latter was photographed by Gertrude Jekyll and still survives, but is now hidden under recent additions. There is just one king-post roof, with a substantial ridge-piece, in Churt (Fig. 11, N). This cottage was built in 1365 for two warreners, sent by the Bishop of Winchester to make a rabbit warren there (historical information from Philip Brooks).

After 1550, our new smoke-bay houses were always two-storeyed and usually with attic storage and half-hipped roofs to give greater head-room. Now the clasped-purlin/wind-brace roof became the standard roof-type. Crown-posts and collar-purlins were not suitable for attics where they obstructed movement.

EARLY MEDIEVAL HOUSES (BEFORE 1400)

Several medieval halls have long passing-braces in the framing (Figs 8 and 9). These extend up from near the base of the main posts to the wall-plate, being halved over the mid-rail. This lavish use of timber is accompanied by long scarfing-joints in the wall-plates with spurs linking arch-braces to the main posts, corner angle-ties and square-section timbers. Perhaps some of these early houses also had aisles. Houses and barns with these features have been selected, as they represent a date probably before 1400, when there was no shortage of timber. Or was it that these buildings with extra framing have survived because they were so well built? Several barns with long passing-braces have been included.

As may be expected, the overall plan is that of an open hall with one or two floored-over ends. Roof trusses show a wide variety of structure with unusual features.

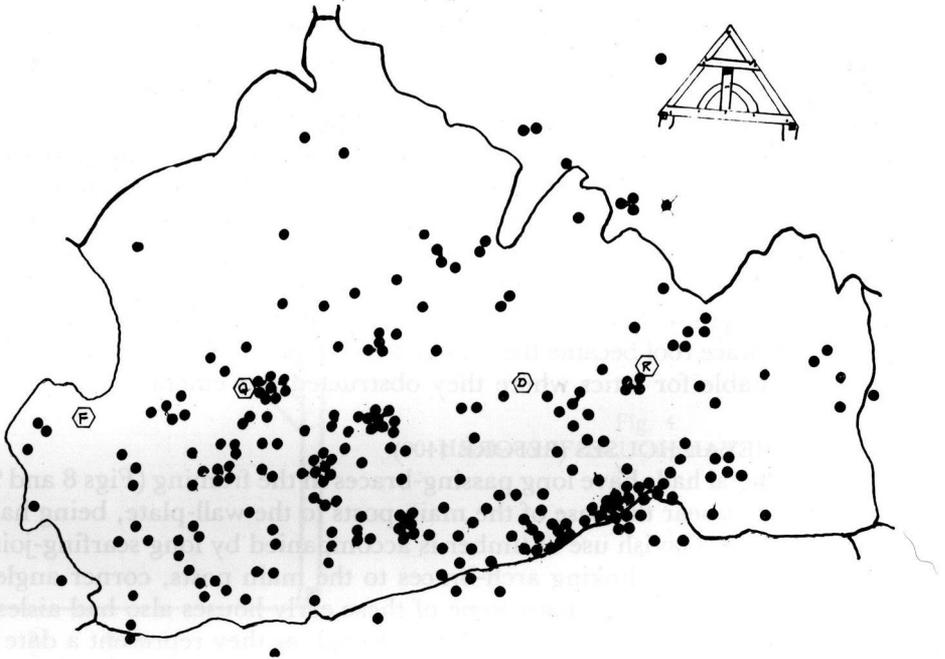
In many of these older houses parts have been rebuilt or are not exposed. A diagram shows the features which are considered to be early and houses with two or more are included in this survey (Figs 9, 10 and 11).

INTERNAL JETTIES

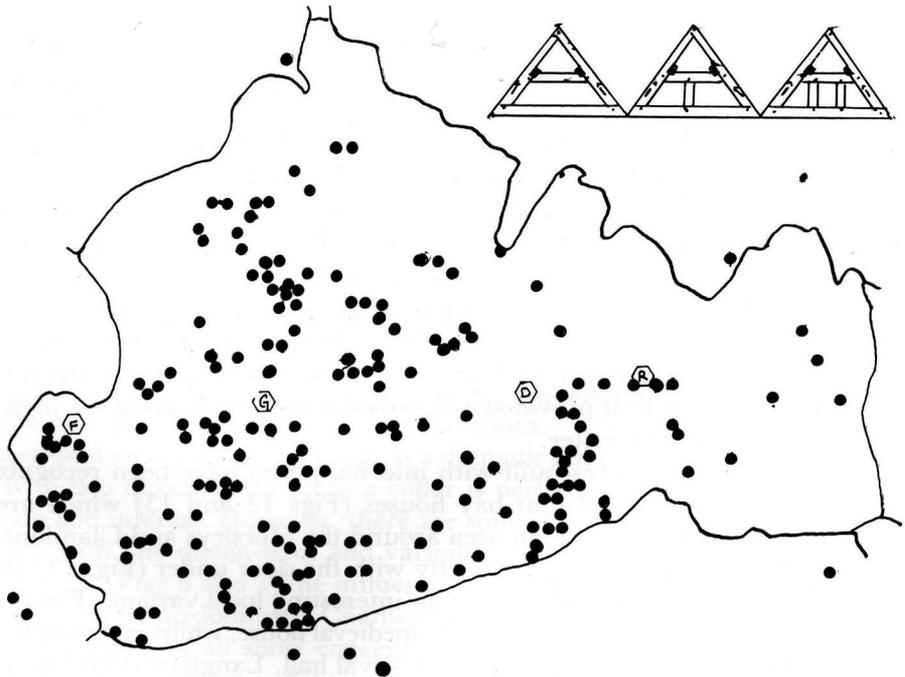
It is not unusual for a medieval house to have an external jetty facing the road or the church (Fig. 3, B). The jetty increased the space in the bedroom, but permitted the cold outside air to percolate through the floorboards. An internal jettying of the solar bedroom over the open hall increased the bedroom space; it added under-floor warmth from the hall; it provided a canopy for the bench along the high end of the hall; and also saved a rafter.

Sixty-four hall houses built with internal jetties have been recognized. These include two-, three-, and four-bay houses (Figs 12 and 13) which are scattered throughout the county, with an area around the Horsleys and Clandons where ten of these houses have a metre-wide jetty with the door under (Fig. 13, D,E). These are two-bay cottages which illustrate an interesting local variant. The internal jetty was an improvement in the design of the medieval house, whilst retaining the open hall.

However, there is one four-bay medieval hall, Langhams, Woking, which was built with an internal jetty over the solar end of the hall, but which was, before use, ceiled over from the jetty to the central, open, truss with a suspended upper floor (Fig. 13, G). The rafters are sooted only over the one bay, that which was open.



B Medieval roofs: crown posts



C Medieval roofs: clasped purlins with wind-braces

Fig. 6

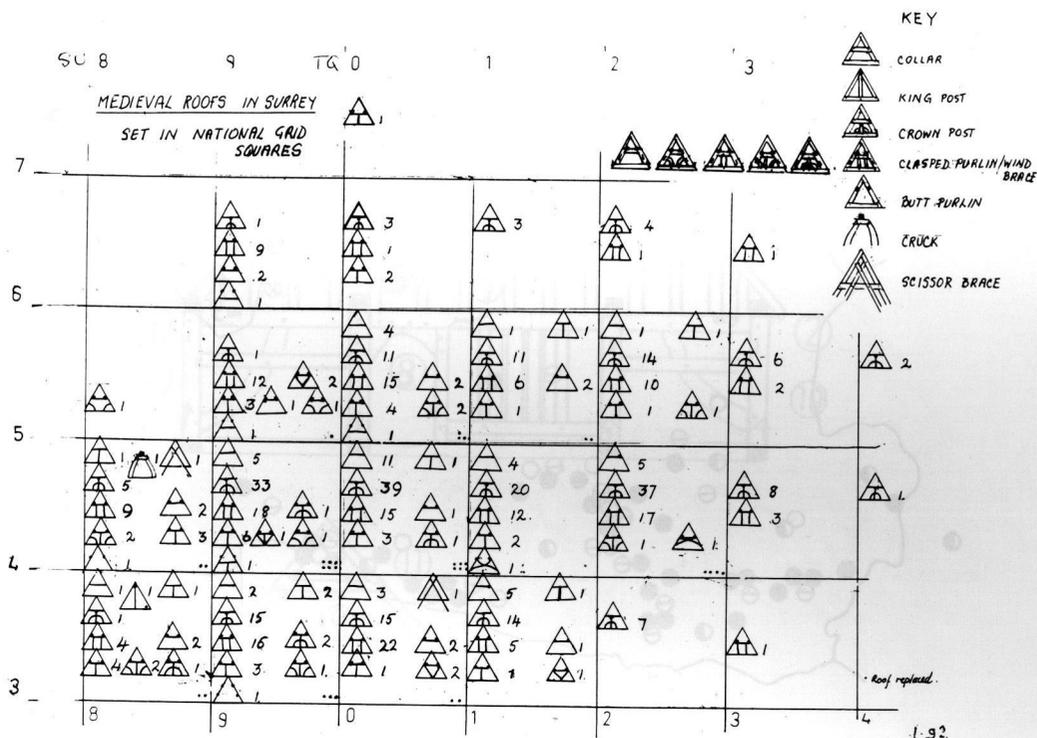


Fig. 7
Medieval roofs in Surrey

THE SUSPENDED UPPER FLOOR OVER ONE BAY OF AN OPEN HALL, (c.1500-1550)
A stage in the development of some open-hall houses was the ceiling over of one bay of the open hall to give another bedroom, and to protect those in the hall from smoke from the hearth. It is not known yet whether the house built at this time with this upper floor and no 'open truss' followed an adaptation of an old house, or was first with this new idea. This new house-plan displayed no reduction in the size of the living room. The service bay was still at the lower end beyond the opposed entrances. The hearth was built in that bay open to the roof with the opposed entrances and it cannot have been really satisfactory without screens to protect the hearth from draughts (Figs 15, 16, 17).

There was no longer an open truss over the hall. The suspended upper floor was supported on chamfered joists which were set generally parallel with the side walls, and tenoned into a bressumer moulded on both sides. This bressumer crossed the hall and was supported by stout studs and bracing from perhaps a cambered-tie over. There was no partition and no central post under this bressumer, and the truss over had never been an open truss (Fig 17, A1, B1). The only sooted rafters were over the open bay. The suspended upper room over the other hall-bay became the best bedroom, having under-floor heating and the end room which, in a medieval house was known as the solar, was now the landing room at the head of the stairs.

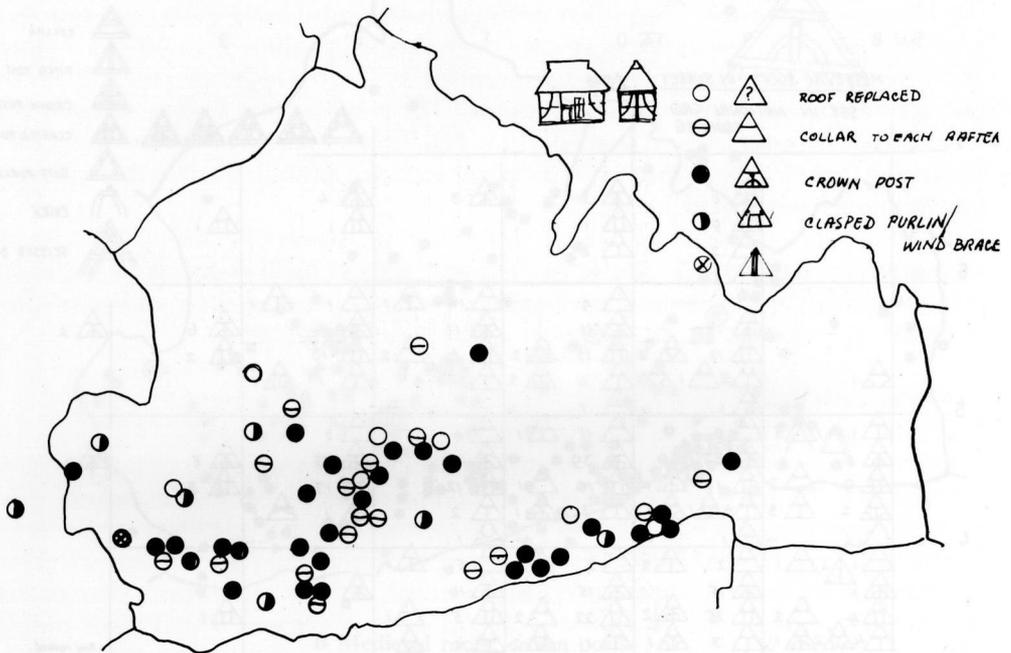
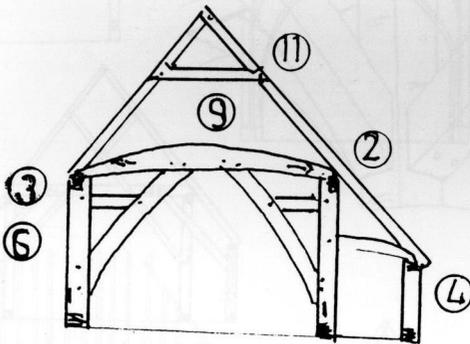
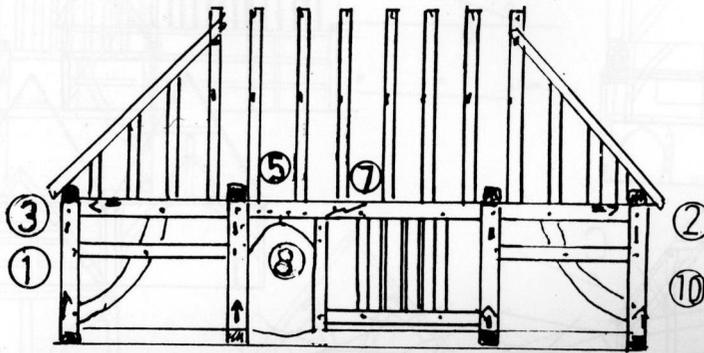


Fig. 8

Long passing-braces in the framing

Twenty-seven houses have been recognized with a central bay open to the roof (Fig. 17, A); and fifteen with an end bay open to the roof (Fig. 17, B1, B3). These houses are scattered throughout Surrey. Newdigate has two houses, side by side. Saplings (Fig. 17, B1) and High Trees (Fig. 17, B2). Both have an end-bay open to the roof. Saplings is a house also exceptional in being built with original attics, and all this can be seen from outside.

A Wealden house, 53 High Street, Reigate (Fig. 17, C), a later medieval building of some sophistication, has also one bay of the open hall ceiled over, with the joists extending forward to be jettied. Sooted rafters occur only over the open bay, confirming this theory. These transitional houses, built with improvements to the earlier open-hall house were replaced *c.* 1550 by the smoke-bay house. Therefore, their roof-structure and framing may show features of earlier or later houses. They retain the arching braces in the framing and jowl posts. The majority have the clapsed-purlin/wind-brace roof-structure.

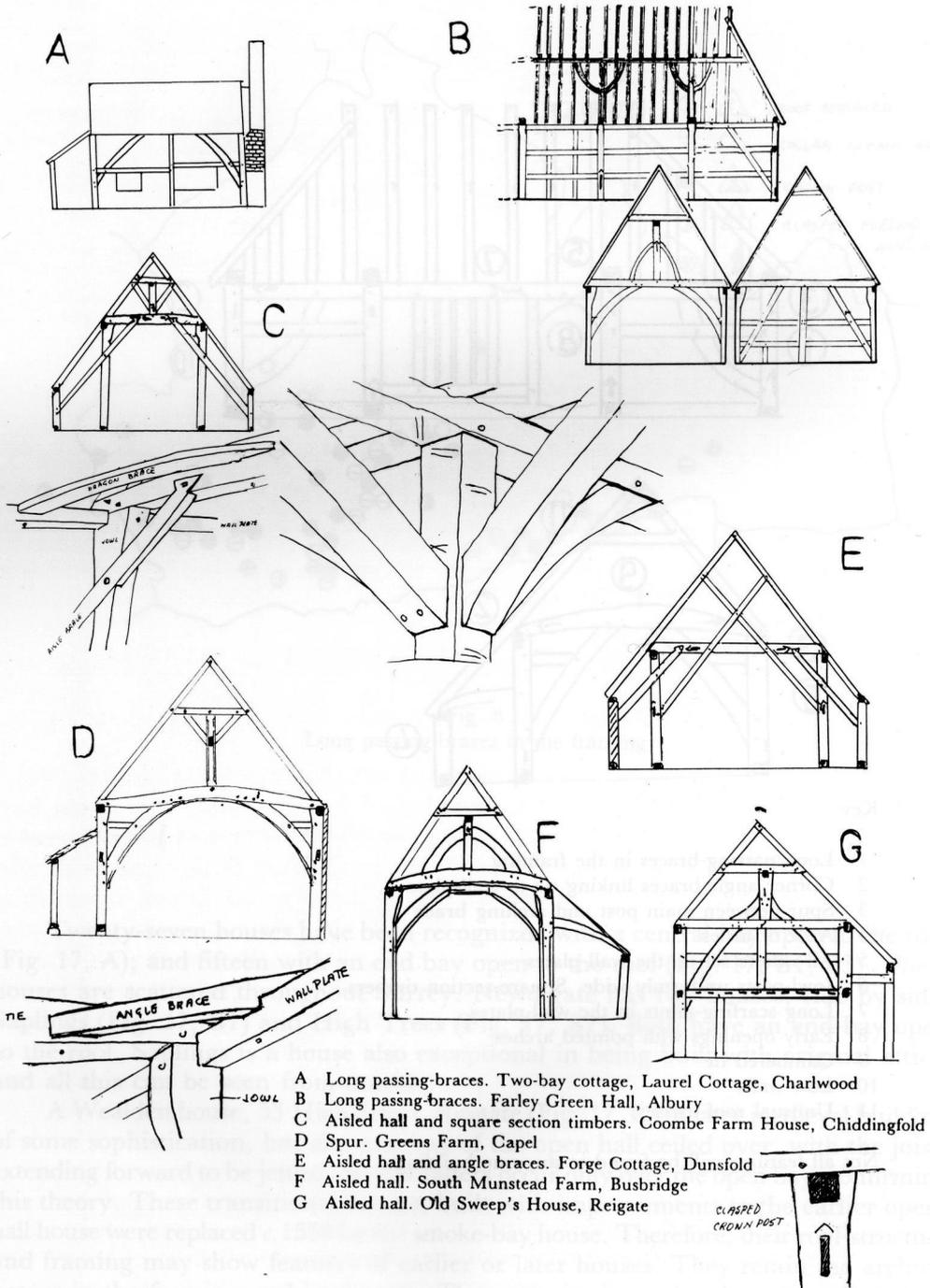


Key

- 1 Long passing-braces in the framing
- 2 Corner angle-braces linking tie to wall-plate
- 3 Spur between main post and arching brace
- 4 Aisle or aisles
- 5 All rafters set on the wall-plates
- 6 Jowl-posts uniformly wide. Square-section timbers
- 7 Long scarfing-joints in the wall-plates
- 8 Early openings with pointed arches
- 9 Cambered tie
- 10 Low walls
- 11 Unusual roof-trusses

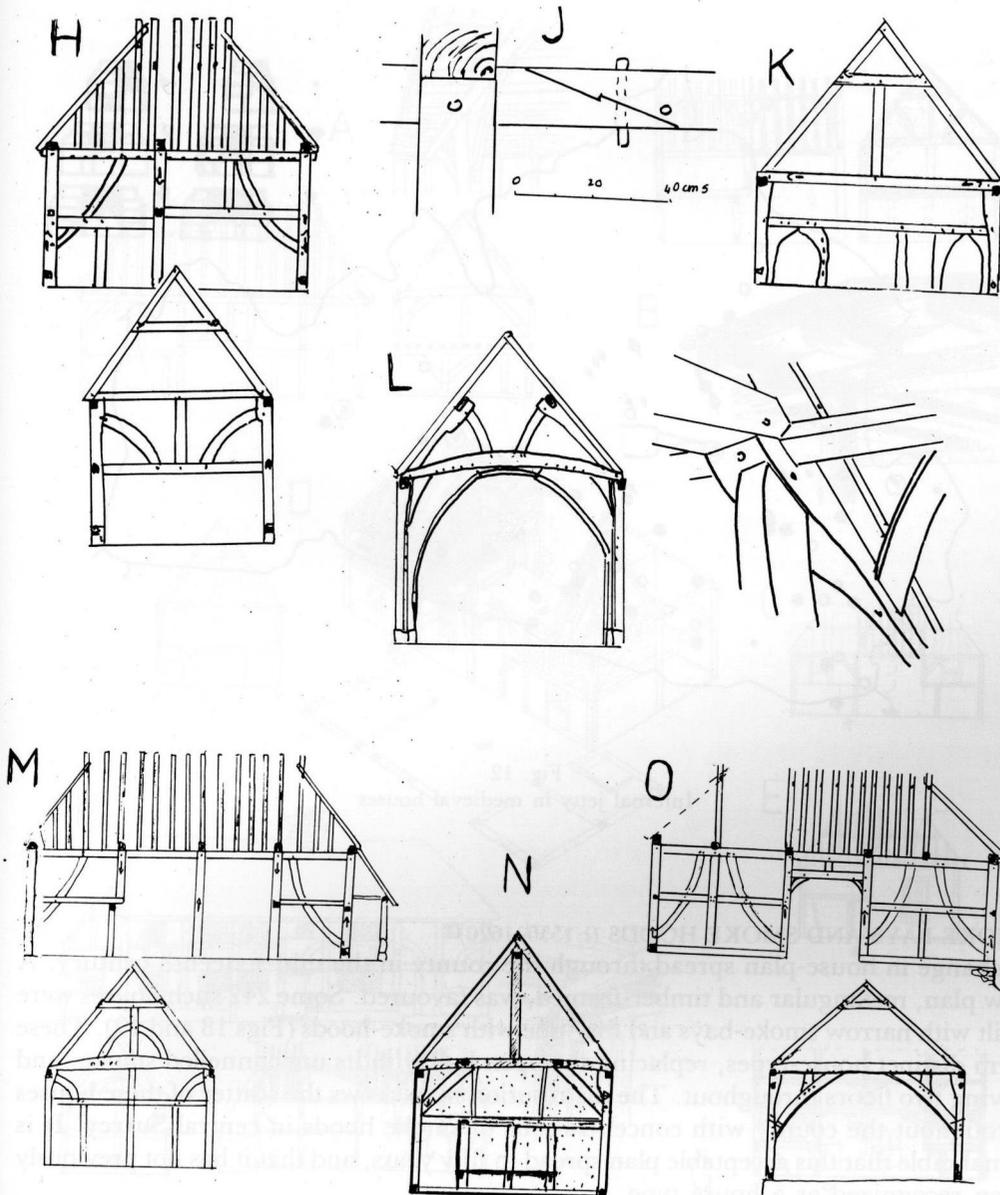
Not all features will be found in any one building

Fig. 9
Some features of early medieval buildings in Surrey



A Long passing-braces. Two-bay cottage, Laurel Cottage, Charlwood
 B Long passing-braces. Farley Green Hall, Albury
 C Aisled hall and square section timbers. Coombe Farm House, Chiddingfold
 D Spur. Greens Farm, Capel
 E Aisled hall and angle braces. Forge Cottage, Dunsfold
 F Aisled hall. South Munstead Farm, Busbridge
 G Aisled hall. Old Sweep's House, Reigate

Fig. 10
 Early medieval houses



- H All rafters on wall-plate. Hill Farm Barn (Old house), Thursley
 J Long scarfing-joint. The Cottage, The Street, Charlwood
 K Door-heads and angle-braces. Low walls. Tigbourne Farm, Wormley
 L Unusual roof. Good scantling timbers. Bakers Gate, Pirbright
 M Coupled-rafter roof and internal jetty. Upper Ridgway Farm, Thursley
 N A Hampshire roof. Moorside Churt (dated 1365)
 O A barn with long passing-braces and coupled-rafter roof and spurs. Hill House Farm-Barn, Ewhurst

Fig. 11
 Early medieval houses (cont.)

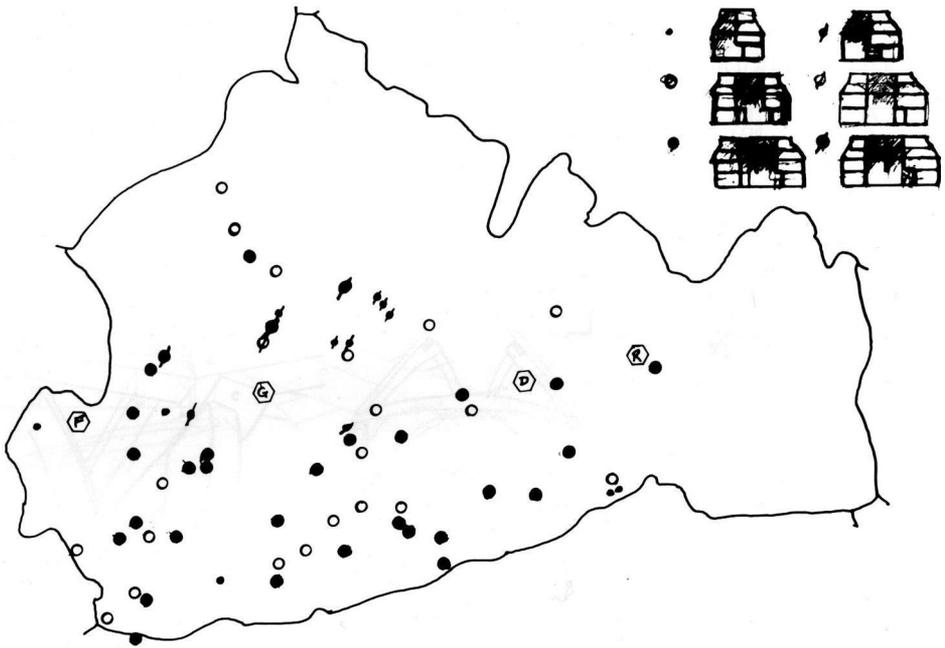
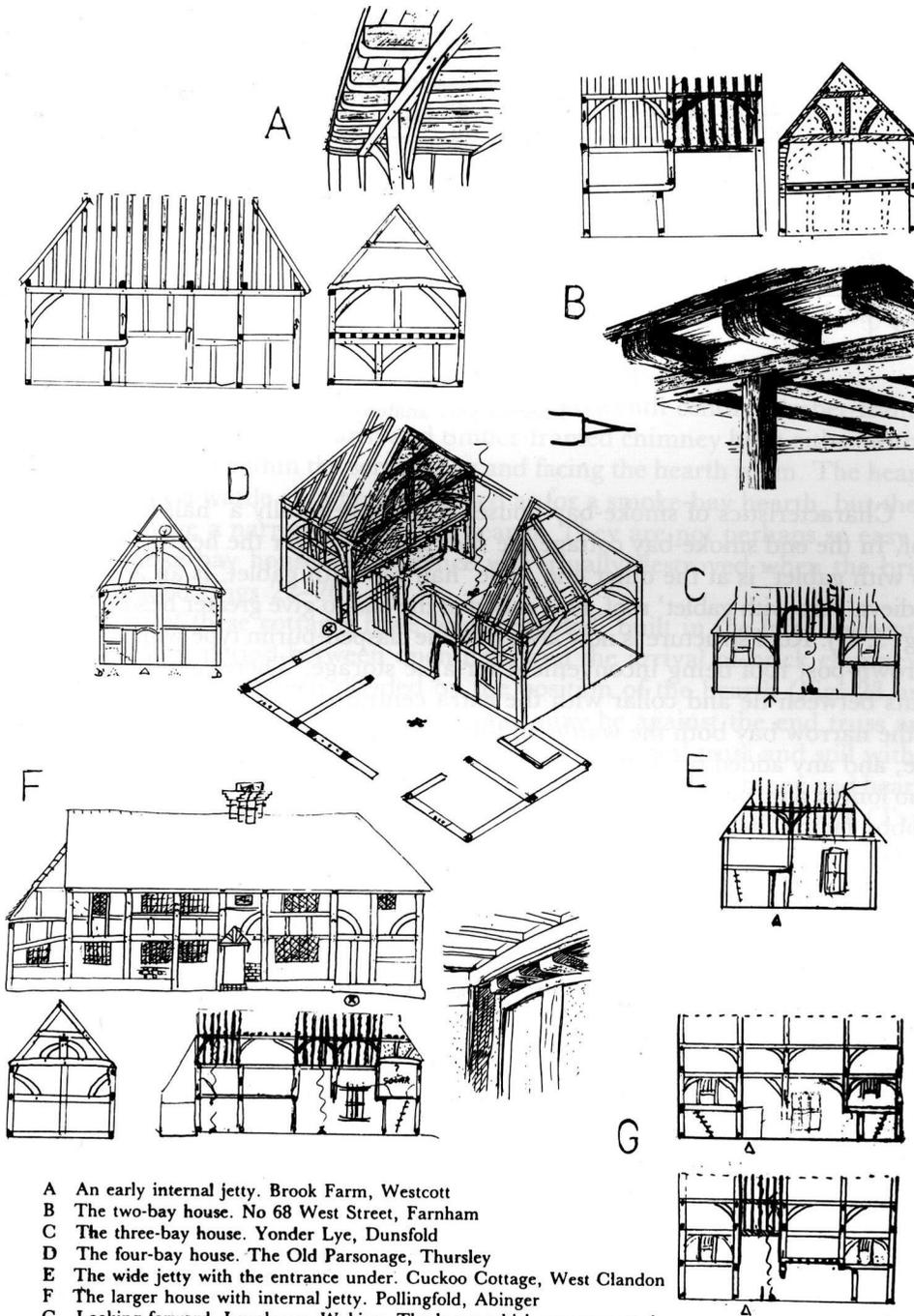


Fig. 12
Internal jetty in medieval houses

SMOKE BAYS AND SMOKE HOODS (c. 1550-1620)

A change in house-plan spread through the county in the mid-sixteenth century. A new plan, rectangular and timber-framed, was favoured. Some 242 such houses were built with narrow smoke-bays and fifty-one with smoke-hoods (Figs 18 and 19). These form distinct house-types, replacing the open hall with its unchannelled smoke, and having two floors throughout. The distribution map shows the scatter of these houses throughout the county with concentrations of smoke hoods in central Surrey. It is remarkable that this acceptable plan spread in fifty years, and that it has not previously been recognized as a house type.

In the smoke-bay house the hearth is framed in the narrow bay, with entrance and stair in the same bay (Fig. 20, A, D1, D2). In the cottage the end narrow-bay is the hearth-bay (Fig. 20, B, C). Larger houses have a central, narrow, hearth-bay with either an unheated parlour backing the hearth-bay (Fig. 20, D1, D2) or two backing hearths in the hearth-bay (Fig. 20, A). In all houses the service bay lies beyond the living room. Larger houses of five bays may have a servants' hall—still open to the roof—in an end bay (Fig. 20, E1, E2).



- A An early internal jetty. Brook Farm, Westcott
- B The two-bay house. No 68 West Street, Farnham
- C The three-bay house. Yonder Lye, Dunsfold
- D The four-bay house. The Old Parsonage, Thursley
- E The wide jetty with the entrance under. Cuckoo Cottage, West Clandon
- F The larger house with internal jetty. Pollingfold, Abinger
- G Looking forward. Langhams, Woking. The house which was converted into a suspended upper floor before having been lived in

Fig. 13
Internal jetties



NO.	S NOS	ROOF TRUSSES					ROOF END			FRAMING.			JOWL	WIDE JETTI	WIDTHS METRES							
		△	△	△	△	△	∕	∕	∕	∕	∕	∕			∕	∕	4	4.5	5	5.5	6	6.5	7
2	11	1	2	2	3	-	1	7	1	3	5	4	-	9	7	-	3	6	2	-	-	-
3	21	3	4	1	9	1	2	16	1	4	1	15	3	20	3	1	1	4	6	7	2	1
4	26	2	13	2	7	1	1	21	4	-	3	15	6	25	1	-	1	3	12	7	2	2
5	1	-	1	-	-	-	-	-	1	-	-	1	-	1	-	-	-	-	-	1	-	-
59																						

Fig. 14
Internal jetty analysis

Characteristics of smoke-bay houses include generally a 'half-hip with gablet' roof. In the end smoke-bay cottage the roof is gabled over the hearth, and the 'half-hip with gablet' is at the other end. The 'half-hip with gablet' is an adaptation of the medieval 'hip with gablet' roof, now raised at the end to give greater headroom upstairs (Fig. 3, G). Roof structure is now always of the clasped-purlin type with wind-bracing, a crown-post roof being inconvenient for attic storage. There may be three queen-struts between tie and collar with the extra central-strut to support the end-rafter. In the narrow bay both the wattle-and-daub trusses are heavily sooted on the inner side, and any added brick chimney here is clean. The house plan is changed. There is no longer a through-passage nor are there opposed entrances. The door opens into a lobby facing the side of the hearth. There is now one stair in the hearth bay (Fig. 20, D1, D2). However, three houses retain a cross-passage behind the hearth. There is an unheated parlour in these houses (Fig. 20, F).

As these smoke-bay houses are a stage in the continuing development of comfort, some may retain some medieval features, such as the jowl post (84 examples) and twenty-four examples have a medieval hip-with-gablet roof. There are some arched braces in the framing (43 examples) or curved tension-bracing (63 examples) but, generally, framing is more precise, with straight corner-tension bracing and square panels (105 examples).

Windows have diamond mullions. Carpenters' assembly marks are generally in Roman numerals, about 3-5 cms in height. Joists and spine-beam in the hearth room have a characteristic stop which retains the medieval step and then curves. This stop is found only in smoke-bay houses.

In the early seventeenth-century bricks became readily available, and these smoke-bay hearths were lined with brick and a brick chimney built. However, thirty-eight of these houses have added brick hearths outside the house, at the back of the living room, and the old stair extended up across the old hearth-space in a more gentle slope. In the Platt, a cottage on Horsell Common (Fig. 20, G) the author has walked up between the still-sooted wattle-and-daub walls. The inglenook hearth had been

added outside at the back of the hearth room. This placing of the added brick hearth and chimney out at the back is a new departure in planning, giving more space inside the living room. So a half-hip roof and added chimney, out at the back, may indicate a later development of a smoke-bay house (Fig. 21).

Dated smoke-bay houses

1593	Betchetts Green, South Holmwood	3 bay
1602	Pear Tree Cottage, Dorking	3 bay
1602	Bridge Farm, Tilford	5 bay
1604	Spikemead, Charlwood	3 bay
1606	Apple Tree Cottage, Elstead	4 bay

SMOKE HOODS AND FRAMED WATTLE CHIMNEYS (c. 1550-1620)

A framed smoke-hood is defined in Surrey as a later sixteenth-century timber-framed cottage with a timber-framed hearth and timber-framed chimney built either within the hearth room, or set within the service bay and facing the hearth room. The hearth may be framed for a wattle chimney or framed as for a smoke-bay hearth, but these cottages do not have a narrow bay for the hearth. They are not perhaps so easy to recognize as smoke-bay houses as evidence was usually destroyed when the brick chimney was added (Figs 22-26).

Forty-seven of these cottages have been recorded, built in the later sixteenth-century in the short period between open halls and the arrival of brick chimneys. For this survey they have been divided by the position of the hearth (Figs 23 and 24). The hearth is always set up to a truss, and may be against the end truss and in the hearth room (Type A: 25 examples); against the central truss and still within the hearth rooms (Type B: 16 examples); or the wattle-and-daub chimney and hearth may be in the service room, against the central truss facing the hearth room (Type C: 8 examples).

Sometimes there is an extra roof-truss on the other side of the chimney to support the wattle-and-daub framing but there are no main posts in the outer walls. Roof structure is of the clasped-purlin type with wind bracing. Twenty-one examples have 'half-hipped with gable' roofs; five retain the medieval 'hip with gable' roof; and twenty-two are gabled.

Occasionally the light scantling-studs for the upper chimney remain (Fig. 25, D1). Perhaps some of the stone backing to the hearths of the Merstham area may be original, now with a brick chimney above. At Tudor Cottage, Charlwood (Fig. 25, D1, D2) the wattle hearth-surround remains. Exceptionally, one thick clay-daub chimney remains from first floor up at Style Cottage, Eashing (Fig. 25, E). This chimney is timber-framed, set behind the middle truss and up to it. The chimney rises to the level of the collar. Here the clay is replaced by open wattles, allowing smoke to escape into the roof space, sooting the rafters on the way out to the gable.

Figure 25 (F) shows the scant remains of a smoke-hood with part of the hood framing now cut back at wall-plate level, and newer floor-boards replacing the chimney. The new brick chimney was built outside at the back. It is not often that the early hearth in a larger house remains to be identified, but Street Farm, Buckland (Fig.

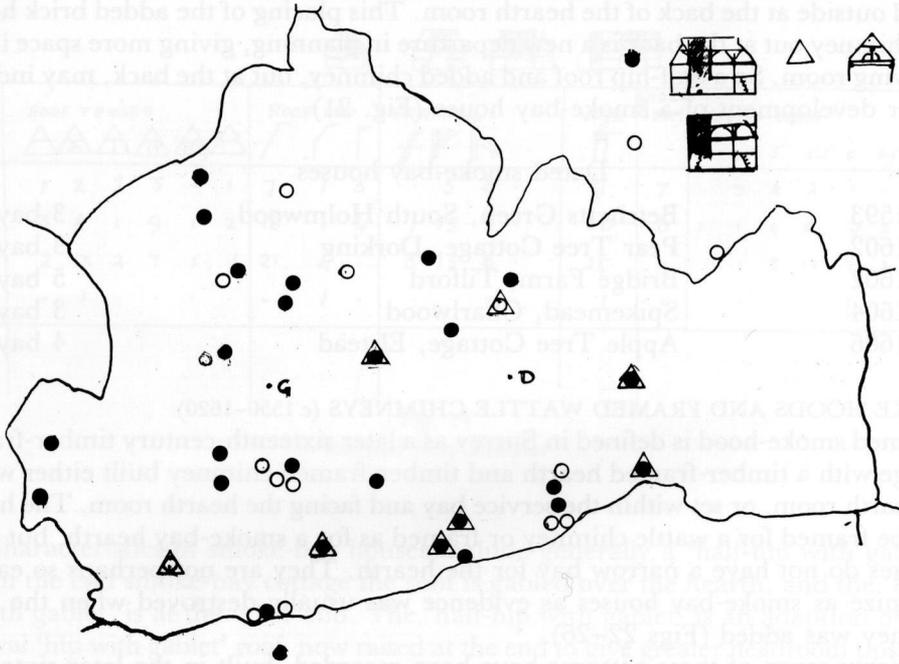


Fig. 15
Suspended upper floors in open-hall houses

	BAYS	NOS	TRUSS			ROOF			FRAMING			JOWL	WIDTHS						
															4	4.5	5	5.5	6	6.5
CENTRAL		27																	
	3	8	4	3	1	4	3	3	2	.	.	4	.	.	3	4	2		
	4	16	2	1	13	8	5	5	5	4	2	13	.	.	.	7	6	1	
	5	2	1	.	.	1	1	.	.	1	.	2	.	.	.	.	1		
	6	1	.	.	.	1	1	.	1	.	.	.	.	.	.	.	1		
END		15																	
	2	1	.	.	1	.	.	1	1	.	.	1	.	.	1	.	.		
	3	13	1	10	.	4	3	6	11	.	.	11	1	1	4	4	1	2	
	4	1	.	.	1	.	.	1	1	.	.	.	.	.	1	.	.		

Fig. 16
Suspended upper floor over one bay of open-hall analysis

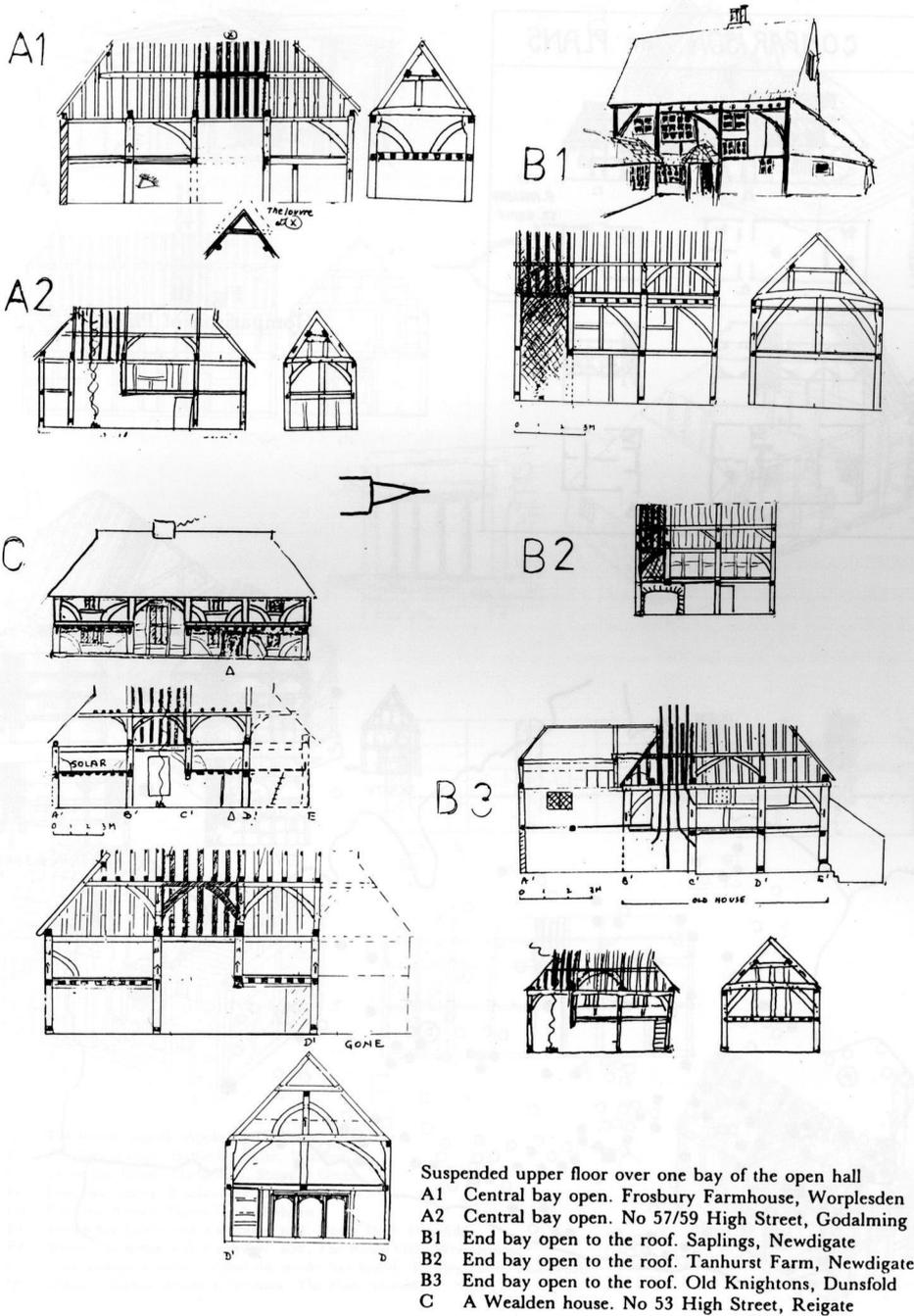


Fig. 17
Suspended upper floor

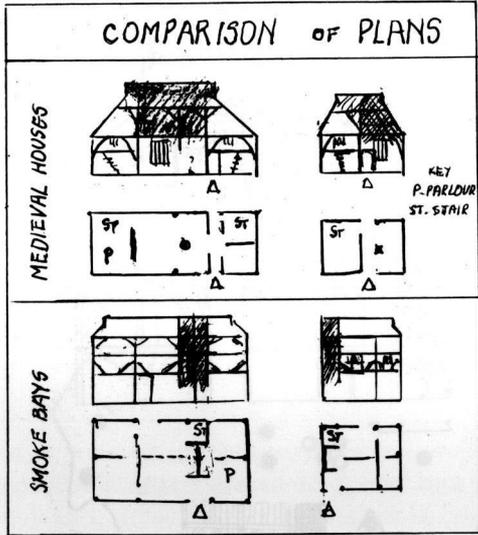
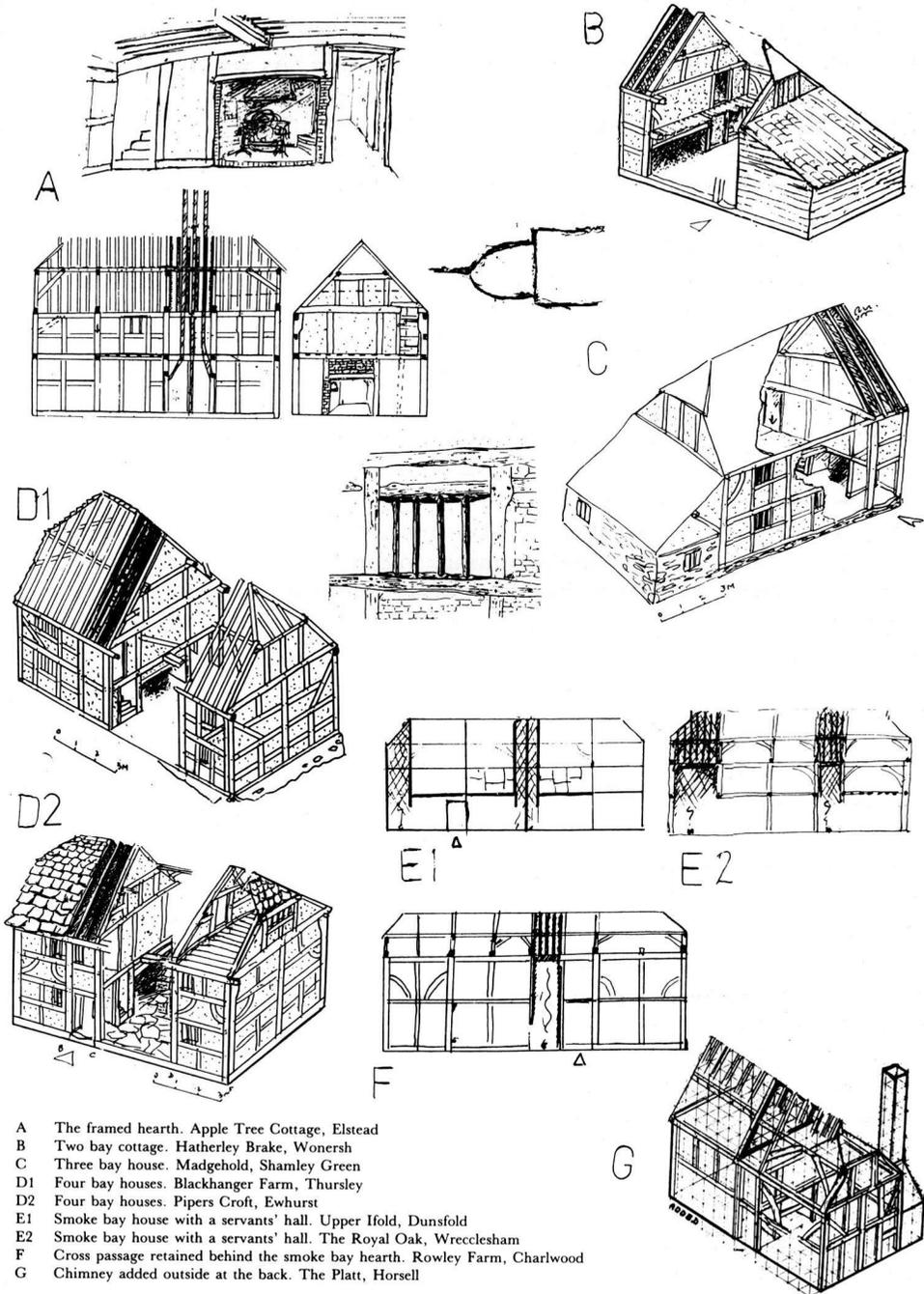


Fig. 18
Comparison of Plans



Fig. 19
Smoke bays c. 1500-1620



- A The framed hearth. Apple Tree Cottage, Elstead
- B Two bay cottage. Hatherley Brake, Wonersh
- C Three bay house. Madgehold, Shamley Green
- D1 Four bay houses. Blackhanger Farm, Thursley
- D2 Four bay houses. Pipers Croft, Ewhurst
- E1 Smoke bay house with a servants' hall. Upper Ifold, Dunsfold
- E2 Smoke bay house with a servants' hall. The Royal Oak, Wrecclesham
- F Cross passage retained behind the smoke bay hearth. Rowley Farm, Charlwood
- G Chimney added outside at the back. The Platt, Horsell

Fig. 20
Smoke bays

25, G), a continuous-jetty house of five bays, has framing for a central smoke-hood in the hearth room, with sooted rafters over. There is also a servants' hall in the north end-bay. Here half the bay was open to the roof. As yet there are no dated smoke-hood houses. The timber-framed chimney-house continued after c. 1600 but with a brick chimney instead of a smoke-hood.

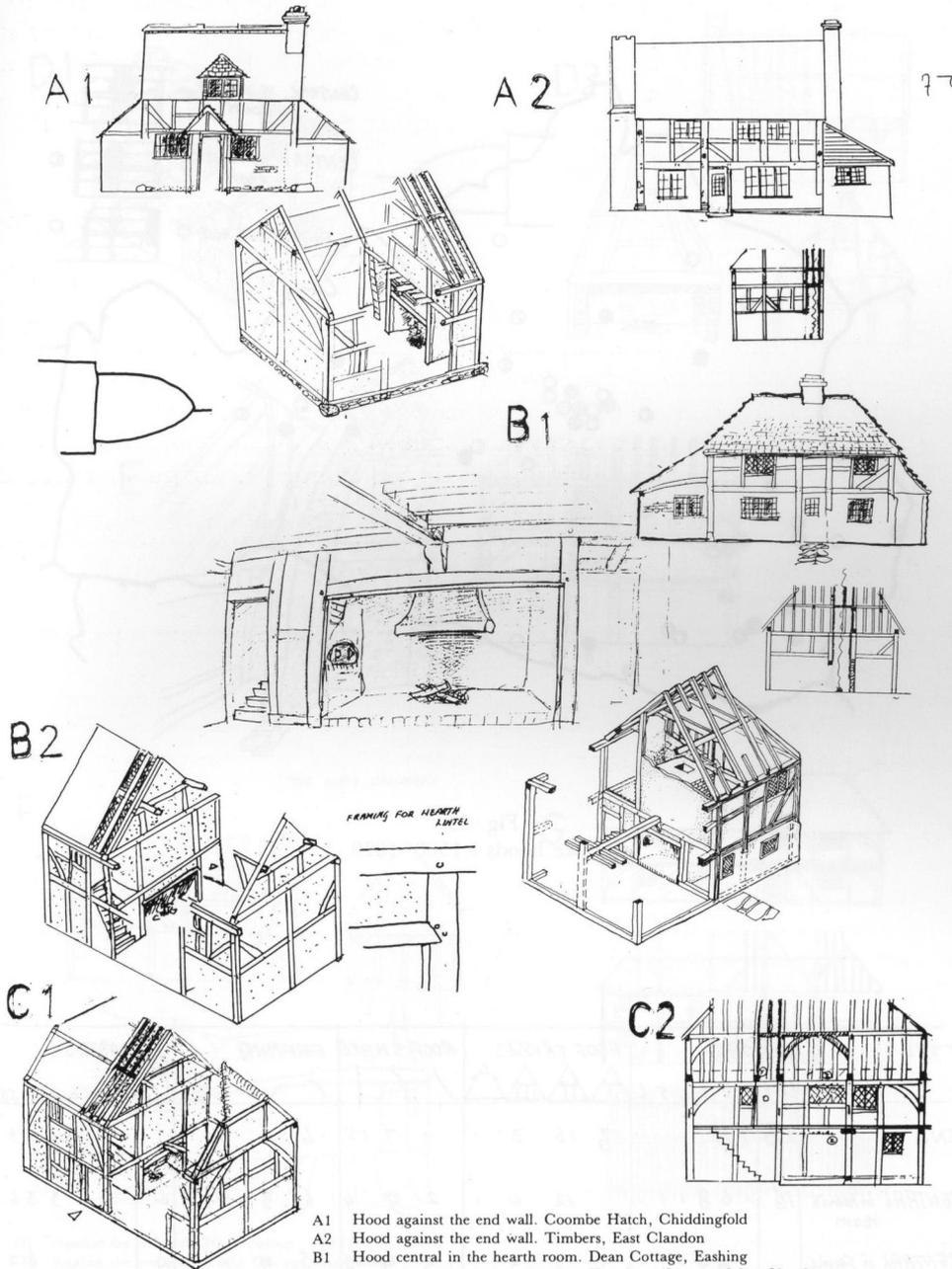
TIMBER-FRAMED HOUSES BUILT WITH BRICK CHIMNEYS (c. 1600-50)

Bricks had been used by the Tudors for their palaces and fine houses in the sixteenth century (Loseley House, Artington, 1563). In the early seventeenth century Surrey's timber-framed four-bay central-hearth house continued the plan of the central smoke-bay house but now with a brick chimney rising through the narrow bay, and the bacon-smoking chamber within one side of the chimney. As before the baffle-entry and stair were in the same narrow bay (Figs 27, 28 and 29).

There were also the smaller houses which continued the three-bay end smoke-bay tradition, but were now of two bays and built with an outside end-chimney. Mill Cottage, Bletchingley, appeared to be an outside end-chimney house but investigation showed that the outside end-chimney replaced a smoke-bay which had been too narrow for the wide, added, chimney built of Merstham stone. A brick or stone chimney is weatherproof and needs no timber-framing, so cottages were now being built with the chimney outside at the end (Fig. 28). Entry may have been in the end—next to the chimney—and later blocked by the added bread oven (Fig. 28, A2), centrally or at the back of the hearth room (Fig. 28, B1).

TYPE	BAYS	NO	TRUSS				ROOF		FRAMING			JOUL WIDTHS						2 1/2 STOREYS						
			1	2	3	4	1	2	1	2	3	4	5	5.5	6	6.5								
 END SMOKE BAY	2	11	-	6	5	-	1	4	6	2	1	5	2	4	-	4	2	2	2	1	-	-		
	3	110	3	49	35	-	6	55	39	15	5	39	38	33	3	12	23	46	14	5	4	3	-	
	4	2	-	2	-	-	-	1	-	-	1	-	-	1	-	-	-	1	1	-	-	-	1	-
 CENTRAL ONE HEARTH	3	37	1	15	16	-	3	13	18	6	9	1	-	3	-	2	3	18	10	4	-	-	-	
	4	49	1	21	20	1	4	30	10	2	8	10	18	19	-	1	2	22	12	8	1	2	-	
	5	3	-	1	1	-	-	3	-	1	1	1	1	1	-	-	-	1	2	-	-	-	-	
	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7	1	-	-	1	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-	1	-	-	-
 CROSS PASSAGE	4	6	-	1	5	-	-	4	2	1	1	2	2	3	-	-	-	1	3	-	1	2	-	
 BACKING HEARTHS	3	4	-	1	3	-	-	3	1	-	-	1	3	1	-	1	-	1	1	1	-	-	-	
	4	3	-	2	1	-	-	2	1	-	-	1	2	2	-	-	-	-	1	2	-	-	-	
	5	2	-	-	2	-	-	1	1	2	1	1	1	1	-	-	-	-	1	1	-	7	-	
	6	1	-	1	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	
 TWO SEPARATE HEARTHS	5	2	-	1	1	-	1	1	-	1	-	-	2	-	-	-	-	-	1	1	-	-	-	
	6	2	-	-	2	-	-	2	-	1	-	1	1	-	-	-	-	-	-	1	1	-	-	-

Fig. 21
Analysis of
smoke bays



- A1 Hood against the end wall. Coombe Hatch, Chiddingfold
- A2 Hood against the end wall. Timbers, East Clandon
- B1 Hood central in the hearth room. Dean Cottage, Eashing
- B2 Hood central in the hearth room. Hawthorn Cottage, West Clandon
- C1 Hood built in the service room facing the living room. Cripplegate, West Horsley
- C2 Hood built in the service room facing the living room. Priorswood, Alford

Fig. 22
Framed smoke-hoods c. 1550-1620

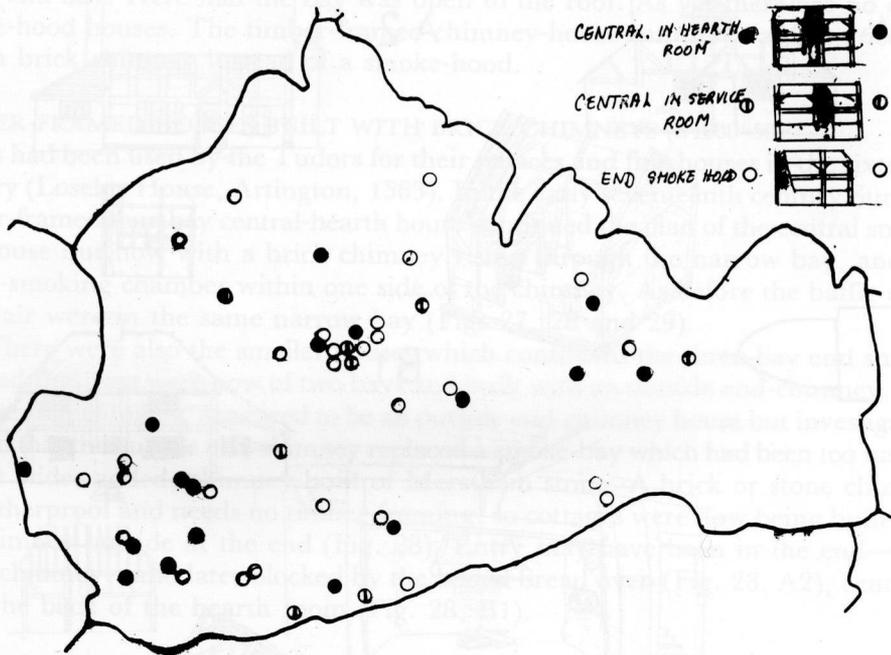
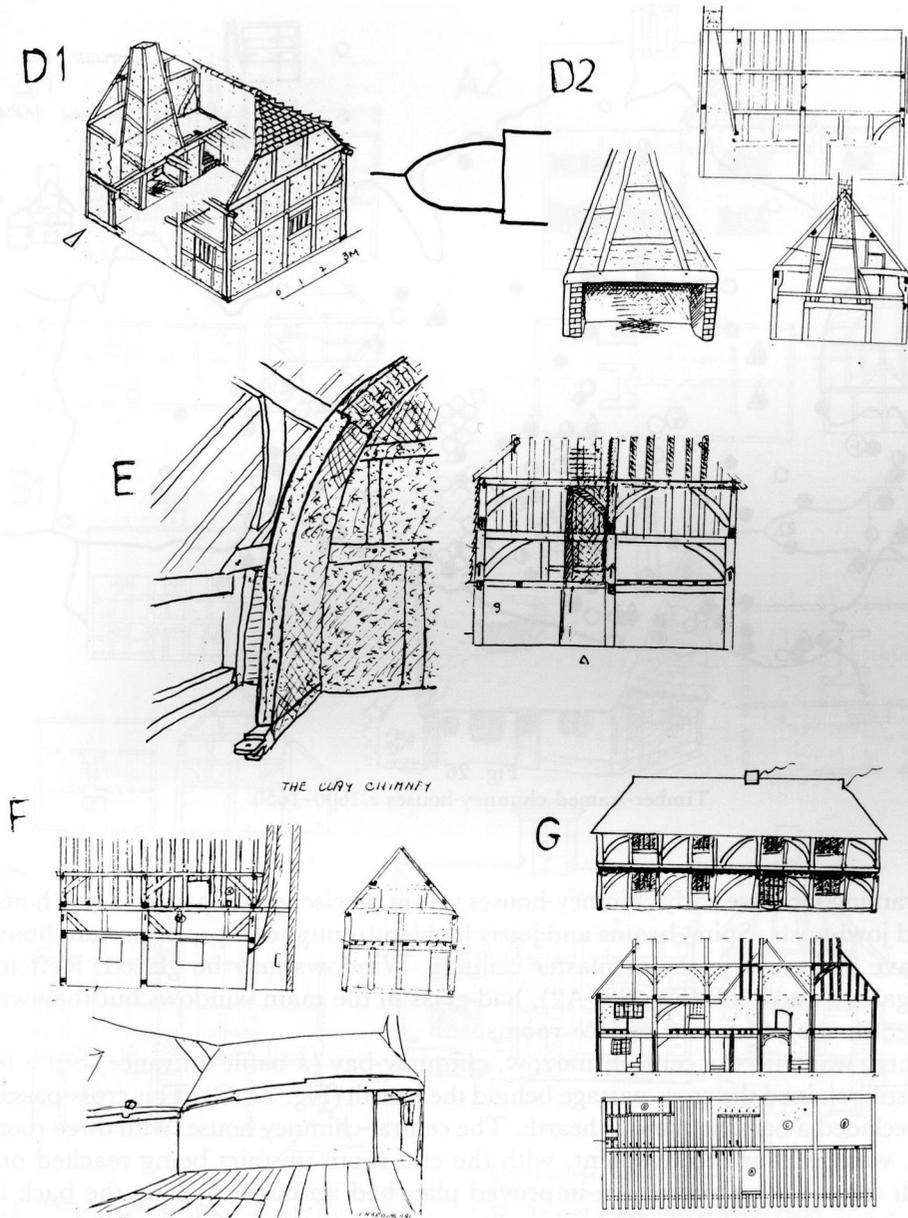


Fig. 23
Smoke hoods c. 1500-1620

TYPE	WDS	BAYS					ROOF TRUSSES				ROOF SHAPE			FRAMING				L	WIDTHS								
		1	2	3	4	5	6	△	△	△	△	/	/	|	/	'	'		□	□	3	4	5	5	6	6	
A. END.	23	7	16	·	·	·	3	16	3	·	·	7	15	6	2	9	5	1	·	5	2	8	3	1	·		
B. CENTRAL in hearth room	16	·	6	8	1	1	·	12	4	·	2	9	4	6	3	5	6	·	·	·	·	·	3	3	6	7	
C. CENTRAL in service room	8	·	4	4	·	·	·	7	2	·	2	4	2	5	2	1	4	·	·	·	·	·	·	1	6	2	1

Fig. 24
Analysis of smoke hoods



- D1 Against the end wall. No 1 Cottage, The Green, Tilford
- D2 Against the end wall. Tudor Cottage Charlwood
- E Clay-framed chimney with open wattles above. Style Cottage, Eashing
- F Remains of a smoke hood. Forge Cottage, Elstead
- G Larger house with continuous jetty, central smoke-hood and end servants-hall half open to the roof. Street Farm, Buckland

Fig. 25
Framed wattle-and-daub chimneys

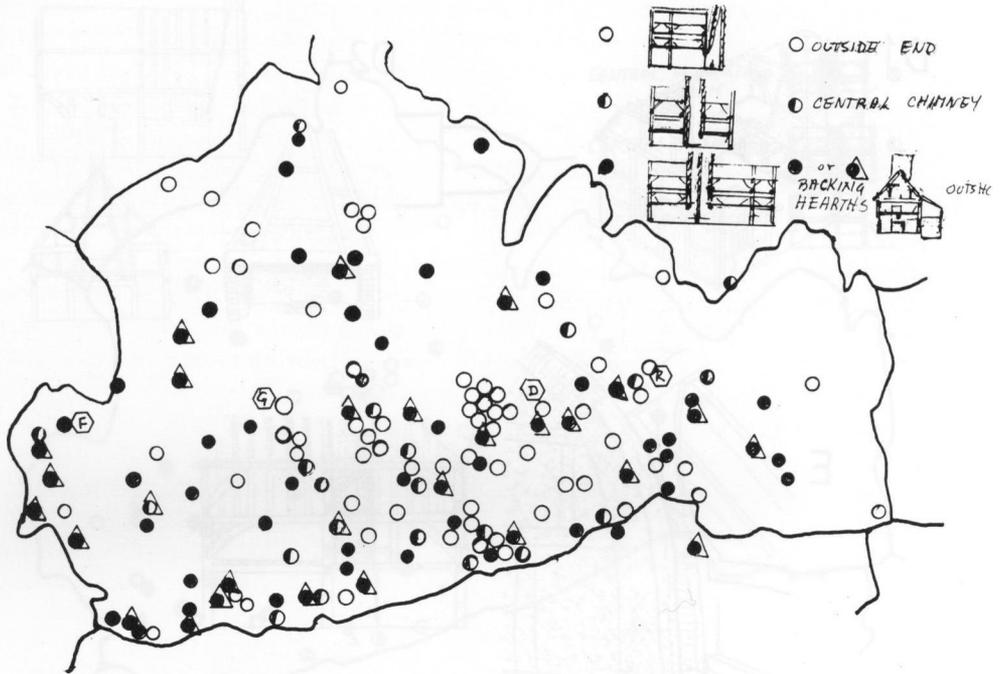
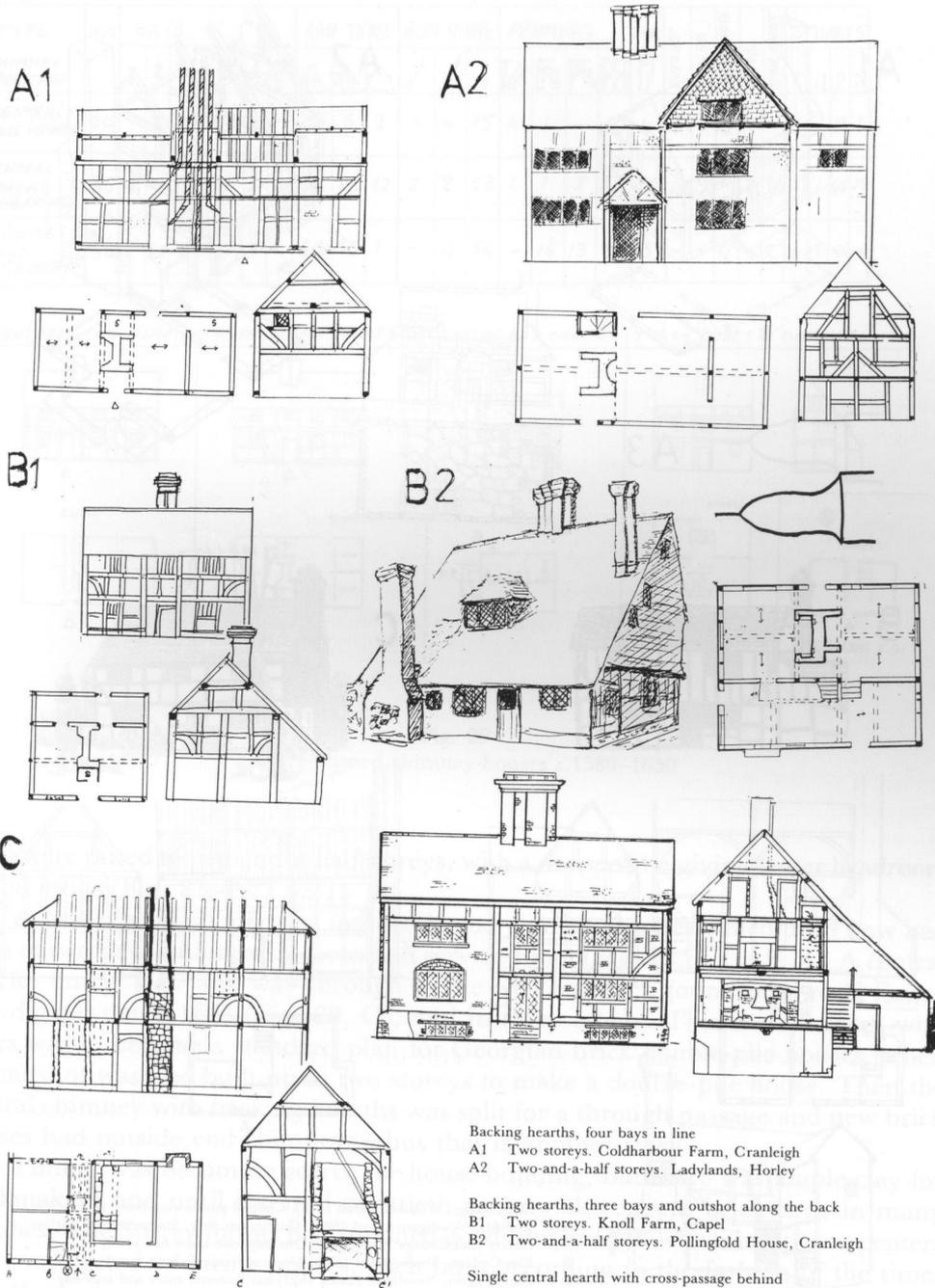


Fig. 26
Timber-framed chimney-houses c. 1600-1650

Framing for these early chimney-houses was in precise square panels. Some houses still had jowl-posts. Spine-beams and joists had lamb-tongue stops. Important houses may have had plain joists for plaster ceilings. Windows may be glazed. Reffolds, Newdigate, dated 1608 (Fig. 28, A2), had glass in the main windows but they were unglazed in the attics and service rooms.

Entry was into the central, narrow, chimney-bay (a baffle entrance) but a few houses still retained the cross-passage behind the hearth (Fig. 27, C). This cross-passage here precluded a backing parlour hearth. The central-chimney house, with three rooms in line, was perhaps inconvenient, with the end room upstairs being reached only through the main bedroom. An improved plan had an outshot along the back for the service rooms and stair. This idea of an outshot may have followed the practice of building a protective shelter linking the well to the house. This shelter is still seen in outlying areas where mains water has only recently arrived. Earlier timber-framed buildings may have added an outshot, with the well now conveniently positioned just three metres out by the outshot wall for a pump and the sink over. The plan of the house was a more compact shape, with the outshot under a catslide roof. Another improvement in these early brick-chimney houses was the greater use of attics. House



Backing hearths, four bays in line
 A1 Two storeys. Coldharbour Farm, Cranleigh
 A2 Two-and-a-half storeys. Ladylands, Horley

Backing hearths, three bays and outshot along the back
 B1 Two storeys. Knoll Farm, Capel
 B2 Two-and-a-half storeys. Pollingfold House, Cranleigh

Single central hearth with cross-passage behind
 C Two storeys. Leather Bottle, Nutfield

Fig. 27
 Central-chimney houses c. 1580-1650

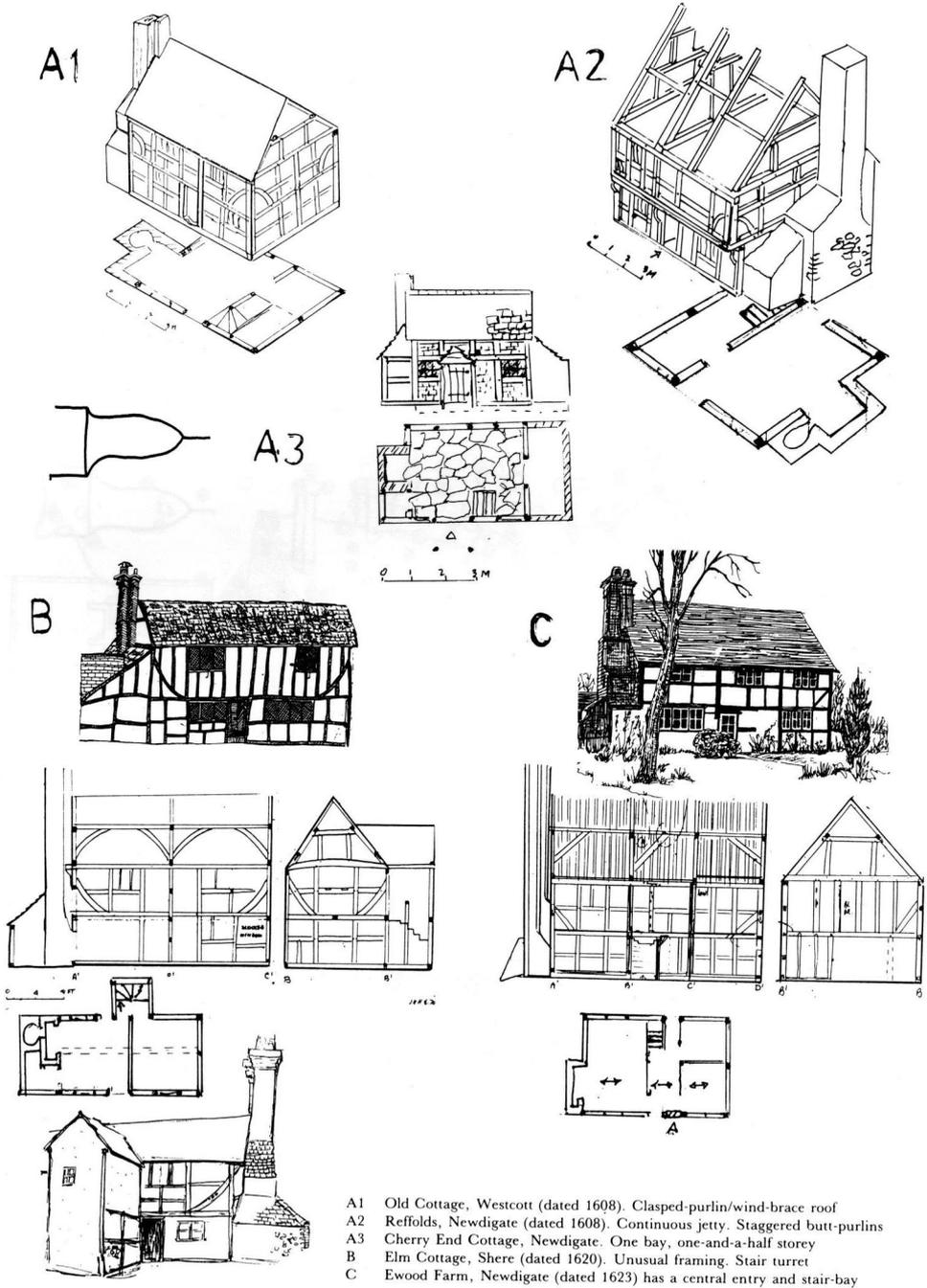


Fig. 28
 Outside end-chimney houses c. 1580-1650

TYPE CHIMNEY POSITION	NOS	BAYS						ROOF TRUSS			ROOF SHAPE			FRAMING					JOWL	OUTSHOT	CELLAR	PASSAGE	WING	STAIR TOWER	STOREYS			
		1	2	3	4	5	6	7	△	△	△	/	/	|	W	B	K	H							I	1	1½	2	2½
CENTRAL- ONE HEARTH	20	-	2	12	5	1	-	-	10	6	2	-	4	15	4	1	-	10	4	3	1	5	1	-	-	-	19	1
CENTRAL- BACKING HEARTH	65	-	-	31	26	4	2	-	26	25	12	2	8	53	1	1	5	53	10	19	9	-	7	14	-	1	45	16
OUTSIDE END CHIMNEY	66	2	60	4*	-	-	-	-	50	13	1	-	4	54	-	16	13	33	3	-	-	4*	-	2	6	10	42	-

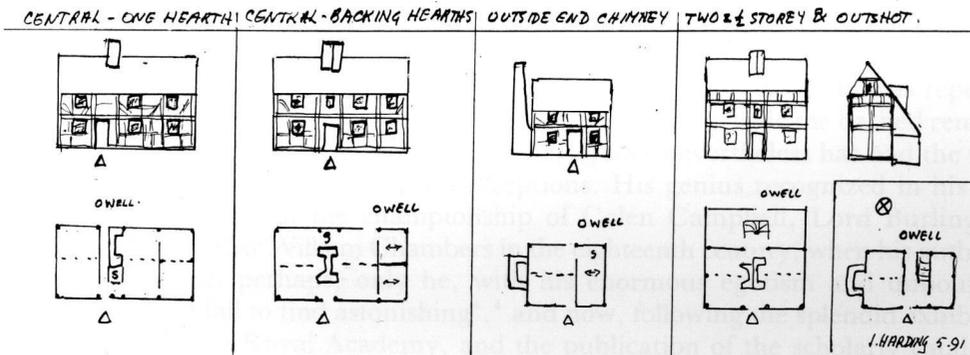


Fig. 29
Timber-framed chimney-houses c.1580-1650

walls were raised to two-and-a-half storeys, with a dropped tie giving better headroom in the attics (Fig. 27, A2, B2).

A new plan was emerging in outside end-chimney houses which until now had been of two bays with hearth-room and service-room (Fig. 28, A1, A2, B). A central bay for entry, stair and way through to the well has been found in Ewood Farm, Newdigate, dated 1623 (Fig. 28, C), and in three others. This central entry with stairs was to become a standard plan for Georgian brick double-pile houses, when the outshot was also built up to two storeys to make a double-pile house. Then the central chimney with backing hearths was split for a through passage and new brick houses had outside end-chimneys—but that is another story.

Timber was becoming scarce for house building, but there was ample clay for brickmaking and until the mid-twentieth century there were brickyards in many parishes. The Surrey forests had supplied good timber from which master carpenters had constructed enduring houses, each built according to the fashion of the time, and of which so many remain.

TYPE	NO.	DATE	NO. STORES	NO. CHIMNEYS	NO. WINDOWS	NO. DOORS	NO. STAIRS	NO. BATHS	NO. KITCHENS	NO. HALLS	NO. BED ROOMS	NO. BATHS	NO. KITCHENS	NO. HALLS	NO. BED ROOMS
CHIMNEY	1	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	2	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	3	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	4	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	5	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	6	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	7	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	8	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	9	1850	2	1	4	2	1	1	1	1	1	1	1	1	1
CHIMNEY	10	1850	2	1	4	2	1	1	1	1	1	1	1	1	1



Fig. 28
Timber-framed chimney-houses c.1580-1650

walls were raised to two and a half storeys, with a dropped ceiling in the bedroom in the attic (Fig. 27, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z). A new plan was emerging in outside end-chimney houses which until now had been of two days with hearthstone and service-room (Fig. 28, A, B). A central bay for entry, stair and way through to the well has been found in Wood Farm, Newgate, dated 1623 (Fig. 28, C), and in three others. This central bay with stairs was to become a standard plan for Georgian brick double-pile houses when the outlier was also built up to two storeys to make a double-pile house. Then the central chimney with backing hearths was split for a through passage and new brick houses had outside end-chimneys—but that is another story.

Timber was becoming scarce for house building, but there was a multiplicity for brickmaking and until the mid-twentieth century there were plenty in many parishes. The quarry forests had supplied good timber from which carpenters had constructed extensive houses, each built according to the fashion of the time, and of which so many remain.

Fig. 29
Outside end-chimney houses c.1580-1650