account for perhaps no more than 5% of an accident and emergency department's cases this approach could be applicable to other types of injury.

In the long run self-supporting sports clinics, on the lines of the one that opened recently in Cambridge,[6] could provide a good solution. But, as with industrial rehabilitation, in a good accident service or even accident and emergency department the onus should surely be on the NHS to provide some kind of help when the ideal special services are not available.

I am deeply grateful to all the people who have been so generous with their help.

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General Practice Observed

A do-it-yourself medical centre

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British Medical Journal, 1979, **2**, 1269-1271

Summary and conclusions

A group practice commissioned a local building company to build their own medical centre comprising 370 m² (4000 ft²) of building with an adequate car park at a total cost of £60 000 with design to completion in nine months. A bank loan for 10 years was assigned to the partnership and each partner made his own arrangements for repayment. The updated cost for June 1979 is £80 000-85 000. Building a centre in this way is professionally and financially rewarding.

Introduction

A converted Georgian house leased from the council since 1939 had become too small and inconvenient for a busy practice with a growing list of 10 000 patients.

In 1969 negotiations began with the hospital authorities to find a site in the hospital grounds for a medical centre and these were completed by 1976. During this period two other group practices originally interested in this scheme opted to build their own centre or adapt their existing premises. Architect-designed plans were drawn up in outline, and costs of £100 000 were originally estimated. It was stated that six months of detailed planning and quantity surveying were needed before the project could even go to tender. Furthermore building time was estimated at 12 months. The General Practitioner Finance Committee (GPFC) lending rate was 15½%, and inflation was raising building costs by nearly 20% a year. The financial problems seemed insurmountable.

At this time one of the partners was struck by the discrepancy between the cost of building a modern house and that of building a purpose-designed surgery. In desperation, therefore, and unbeknown to his partners, he approached a building-cost expert to explore this discrepancy. He was pleasantly surprised to be quoted a "package deal" of £55 000 for traditionally built premises designed by the firm to the group's requirements for completion in six months. A package deal in this sense is a relatively new building concept that has emanated from North America. Detailed pricing is abandoned, and a comprehensive estimate is prepared on total square footage, allowing in this a proportion for internal fittings and fixtures. Flexibility takes the place of detailed planning. Costs, time of planning, and quantity surveying are therefore virtually eliminated.

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Finding a builder

With considerable misgivings but emphasising the need for speed, the partners decided to (*a*) abandon the concept of an architect-designed building, (*b*) draw their own rough plans, and (*c*) invite tenders from three building firms to smooth their rough design and submit estimates of cost and construction times.

Two firms produced plans and costing in one week. The third costed on rough plans only in two weeks.

Company 1—Large national company, on rough plans only with no fixed-price contract and no completion date: £90 000.

Company 2—Large local construction company offering no fixed contract price, no completion date, and only a gravel car park: £66 000.

Company 3—Medium-sized local building company, fixed price contract, six months' completion, and a large tarmacadam car park: £57 000.

The partners had no difficulty in choosing company 3 (Sibbasbridge Ltd, Builders, Stratford-upon-Avon).

Design

There was particular concern that the one-storey building should be light, airy, cheerful, inviting, and non-clinical. The practice nurse pointed out that she too needed to work in a treatment room that fulfilled the same criteria. The partners planned a smooth flow of patients from reception and waiting areas to treatment room and surgeries (fig 1). To provide easy access for the nurse between her

treatment room and the doctors' examination rooms, a central treatment room was considered essential. This would allow her to use both examination rooms and the treatment room simultaneously. A particular need was for adequate examination areas, and hence each surgery contained an examination couch in addition to the couch in the separate examination rooms. Sub-waiting areas evolved between the surgeries and treatment room during design, which helped to avoid the "packed-out" waiting room so depressing to patients and staff. This accident of planning has proved a useful and notable feature. Some compromises were made but in the end the partners' objectives were achieved.

Requirements were as follows: six consulting rooms; a large treatment room; five separate examination rooms; reception area; practice manager's office; combined district nurse, midwife, and health visitor's room; staff common room and lavatories; kitchen area; waiting room to seat at least 35; records area; typists' room; patients' lavatories; store room; doctors' common room and library; tarmacadam car park for 25 cars; PBX 6 automatic telephone system, three outside lines, direct dialing to all departments at the nearby hospital; comprehensive intercom tailor-made to individual requirements (Indico Manufacturing Co, 40 Chester Road, Castle Bromwich, Birmingham); allowance for future extension of the building; and gas-fired central heating.

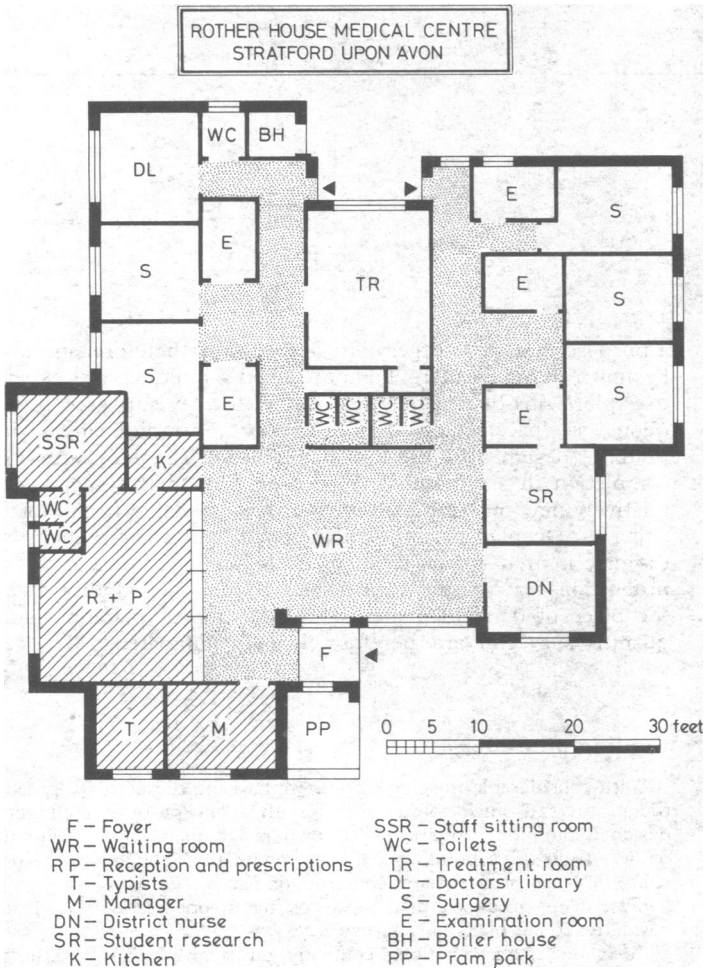

FIG 1.—Lay-out of the medical centre.

Consulting rooms were to be of standard sizes recommended by the DHSS with attention to the design of common areas comprising waiting, reception, and corridors. Eventually the design was evolved to incorporate three interlocking areas: (1) reception and administration (staff area), (2) communal and communication (patients' area), and (3) clinical (doctors' and nurses' area).

SPECIAL FEATURES

Great emphasis was laid on the importance of planning the fixtures in situ—for instance, reception desk, records, seating, and built-in furniture etc. This enabled us to obtain the feel of the building before committing ourselves to a final design and is quite contrary to normal procedure. At the time of planning, however, it was necessary to incorporate the following features: (1) Wider-than-average corridors —a controversial point on cost but well worth while in creating a comfortable effect. (2) Three times the minimal thickness of roof insulation. (3) Double glazing to all clinical rooms. (4) Permanent built-in seating in the waiting room.

With the exception of the intercom system, the above features were all included in the cost price, as were fitted carpets and vinyl tiling.

Building the centre

The committee work that led to the 125-year lease of hospital grounds is not discussed. Suffice to say that we obtained an excellent site at the front of the local hospital. Foundations were started on 5 September 1976 after the driest summer for many years and before the wettest autumn in living memory.

The planning inspector insisted that foundations should be doubled to a depth of 2 m (6·5 ft) because of the abnormal weather and the surrounding tree roots. Fortunately the building company had working directors who were permanently on site. They shrugged, dug deeper, poured more concrete, and muttering darkly accepted the situation. The planning inspector was subsequently ruled out of order, but no one at that stage felt inclined to dig the foundations up again.

The partners took an active part in supervising and negotiating construction. The building rose quickly to roof level despite persistent and torrential rain. Once the roof was on we could get the feeling of the interior. At this stage no detailed plans had been made of the reception, records, and waiting room areas.

There was a large open area. A counter was designed to separate the reception area from the records office. The partners ignored the expert advice of the joiners and insisted on 4 ft 6 in (1·37 m) height for the counter. Since our receptionists are under 7 ft tall and it was impracticable to give all our patients growth hormone, the joiners later had to be begged to saw off 6 in all the way down the 20 ft (6 m) counter to lower it to 4 ft (1·2 m). This was done with great skill and good humour to the relief of the partners.

The next item was the patients' seating for the waiting area. This called for much thought as the effect needed to be warm and relaxed. The base of the seats and table were brick. The seats were completed with hard wood and vinyl cushioning for easy maintenance. The seating was arranged as seen in fig 2. One corner containing a blackboard and Lego table was designed for children.

There was something missing. The whole area looked bare and forbidding. After much discussion four partitions were built on to the reception counter with a further enclosed area for telephoning. The partitions were designed to give maximum privacy with minimum obstruction. Later this technique was used to create the same effect between the reception and waiting areas.

The layout of individual surgeries was controlled by the appropriate partners. All went well except when a partner having persuaded a sweating carpenter to move the built-in fittings in his room from A to B decided, after all, in favour of A. The carpenter was then per-

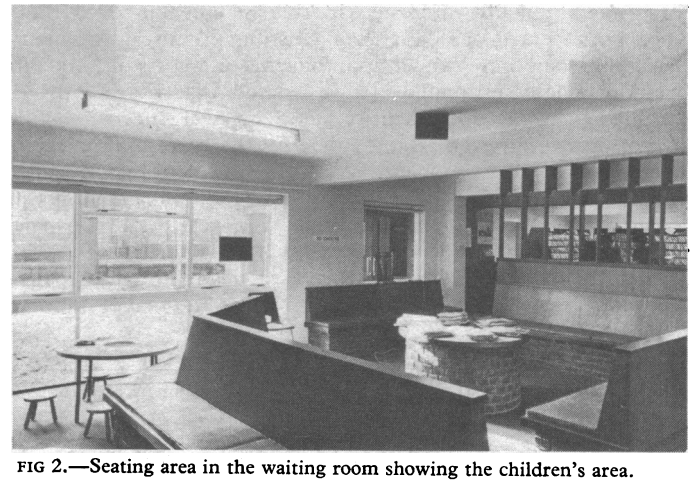

FIG 2.—Seating area in the waiting room showing the children's area.

suaded to move it all back again. The blow was softened by a bottle of whisky.

The practice moved home six months and one week after starting building.

Finance

The eventual cost was £60 000 or £12 000 for each partner. This could have been raised, if approved, by a loan from the GPFC. Their lending rate was, however, 15½%.

The Family Practitioner Committee (FPC) helpfully provided the partners with an estimate of cost-rent allowance, and this allowed fairly accurate figures for negotiation. We approached several local banks, including the bank holding the practice account. All the managers were helpful in theory but their willingness to help was overruled by bureaucracy. Twelve building societies were contacted without success. The problems were threefold: (1) the commercial nature of the premises, (2) problems of co-ownership, and (3) lack of building society funds at the time.

A firm of financial and insurance consultants (J W Sleath and Co Ltd, 58 Theobald's Road, London WC1X 8BR) specialising in finance for the professions was consulted. This was hopeful as a guaranteed bank loan scheme over 15 years was offered at a rate of interest 2½% above base bank rate. There was provision to change to a "with profits policy" at a later stage. There was, however, a single guarantee premium of about £450 and an underwriter's fee of £120. Although this scheme was not used, it would seem acceptable for a partner wishing to pay off the loan over 15 years at an interest rate tied to base bank rate, rather than the inflexible GPFC rate.

By now some knowledge and experience had been acquired, and we decided to approach another local bank. Three of the partners had already made alternative arrangements and therefore the approach on behalf of two partners was not quite such a problem. It was now appreciated that a definite repayment scheme over a maximum period of 10 years was necessary to persuade bank head office to grant a loan. A detailed repayment scheme was drawn up and approved by the practice accountant before presentation. The FPC estimate of cost-rent allowance was most helpful and was incorporated in the suggested scheme.

Estimates of subsequent notional rent were made, and it was shown that the debt could be cleared over 10 years (in theory). Within two weeks the scheme was accepted by the National Westminster Bank, Stratford-upon-Avon. The partners borrowed a total of £24 000 over 10 years at an interest of 3% above base bank rate.

Interest applies to the decreasing balance and therefore diminishes annually. The loan was assigned to the partnership rather than the two partners concerned but potential problems arising from this were prevented by a new clause in the practice agreement. Legal fees, considerable when borrowing from other sources, were minimal. The partners agreed to move the practice account, and further help was obtained with a bridging loan 2½% above base bank rate. The bank manager was complimented by his seniors for his initiative in engendering new business with a local concern.

Because of different ages and financial positions the various partners made the following arrangements.

Partner 1—The senior partner used personal assets to finance his £12 000 share, thereby earning an interest on his capital of 15·5% yearly taxed as unearned income. It would be difficult to find a better investment. *Partner 2* intended to raise a mortgage on his house but a bequest removed the need, and he followed the same course as the senior partner with the same excellent return. *Partner 3* had a small amount of capital (£2000) and raised a further £10 000 by increasing the mortgage on his home. This was possible owing to the increased value of the property over the 10 years since purchase. The building society was aware of the purpose of the loan (that is, commercial building). In this instance, however, the security was on the house and not on the commercial property. *Partners 4 and 5*—Partner 4 already had a heavy mortgage commitment, and partner 5 expected the same shortly. Both borrowed from the bank in the way described.

COST RENT

Yearly cost rent received by the partnership is £9300. This sum is divided equally among the partners to reflect their equal investments. It would be possible, however, for an individual partner to contribute less to the building and receive a smaller proportion of the cost or notional rent.

Our scheme allows partners 1 and 2 to receive their share of cost rent as interest on their capital investment. Partner 3 is able to repay interest on his mortgage incorporating a with-profits endowment insurance, which attracts a personal tax advantage.

Partners 3 and 4 have a short-term cash flow problem but after 10 years will be in the same position as partners 1 and 2. An exact figure of how much it costs partners 4 and 5 a year is not easily given. Both receive cost rent of £1860 a year but this is paid directly to the bank. In addition, they each pay a negotiated sum to the bank to make up the balance (as per negotiated schedule). In strictly net terms allowing for tax relief, it will probably cost partners 4 and 5 about £600-£700 a year during the first three years. The 10-year repayment scheme incorporates increasing repayments after three years so that relatively this figure should reduce when inflation allows increased repayments and a new notional rent.

FINANCE UPDATED FOR 1979

Since our premises were constructed building costs, according to the building-cost index, have risen considerably: January-December 1977, 11·1%; January-December 1978, 10·6%; and January-30 June 1979, 8·2%.

The cost today of our £60 000 centre would be about £79 800. Allowing for further price increases before this article is published and for any inaccuracies, the construction would probably cost £85 000-£95 000.

The cost-rent allowance for a five-doctor practice is currently based on a construction cost of £84 000, but with legal and accountant's expenses this could reach £85 000. Cost rent is based also on GPFC lending rate, which by 16 July 1979 had risen to 16%. Thus the approximate total cost rent for the partnership each year (until there is an advantage in changing to market rent) would be £13 600. Each partner would therefore receive about £2720 cost rent a year.

The cost of repayment of capital and interest over 20 years is as follows:

Quarterly repayment for every £1000 borrowed over 20 years is £42·17. Each partner would borrow £85 000 ÷ 5 = £17 000.

Cost of borrowing £17 000 over 20 years would be £2868 a year.

Therefore net cost for project would be £2868 − £2720 = £148 a year per partner (for building of £85 000).

This does not allow for discrepancy in a tax situation where tax on cost rent received is likely to be at a higher rate than on loan interest tax allowance.

These points clearly illustrate that there is never a particularly bad time to build. If interest rates decrease in the future then there is a positive advantage to building when interest rates are high as the cost-rent allowance will be proportionally greater.

INCOMING PARTNERS

When a partner retires, the incoming partner will be required to purchase his share of the medical centre, one-fifth of the current valuation. The outgoing partner therefore accrues a useful "nest egg" for retirement (in most circumstances free of capital gains tax). A prospective partner, possibly daunted by a large house mortgage, will be offered, in addition to the usual climb to parity, an immediate one-fifth share of the cost rent (that is £1860 a year) or a subsequent one-fifth share of the notional rent.

Conclusion

We have found that building a medical centre in the way described is professionally and financially rewarding.

We wish to thank Mr J Jerome, building manager; Sibbasbridge Ltd, building contractors; Mr R Nellthorp, chairman, Warwickshire Family Practitioner Committee (now retired); Mr Evans, finance officer, family practitioner committee, now chairman; Mrs Clayton, finance department, family practitioner committee (now finance officer); Mrs Salter, administration, family practitioner committee; Mr Alec Williams, manager, Westminster Bank, Stratford-upon-Avon; Mr Tolhurst, hospital secretary, Stratford Hospital, Stratford-upon-Avon; Mr D Barnes, practice accountant, H L Barnes and Sons, Stratford-upon-Avon; Mrs A Bassett, secretary, Rother House Medical Centre, and Mr Thomas E Fletcher, "Plans," 19 Bull Street, Stratford-upon-Avon.