

## C.22 UK - 1945 - Post conflict

### Case study: 1940s Transitional shelter

Case study credit:  
Ged Robinson

#### Country:

UK

#### Disaster:

World War 2

#### Disaster date:

1939-1945

#### Project target population:

Over 2,750,000

#### Families supported:

156,600 houses built between  
1945 and 1948

#### Occupancy rate on handover:

High; many still occupied 65  
years later.

#### Shelter size:

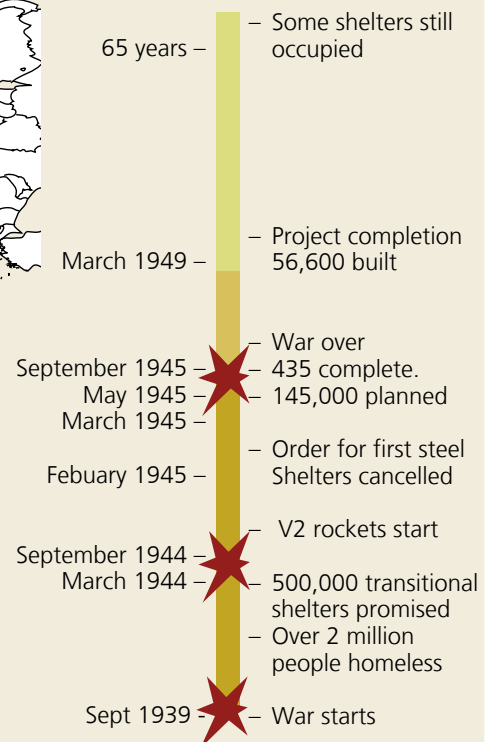
57m<sup>2</sup>. living room, two  
bedrooms, kitchen, bathroom,  
WC and shed.

#### Materials Cost per shelter:

1,300 GBP (1945 prices) to  
1,600 GBP  
Compared to 1000 GBP for  
a brick house with three  
bedrooms



#### Project timeline



#### Summary

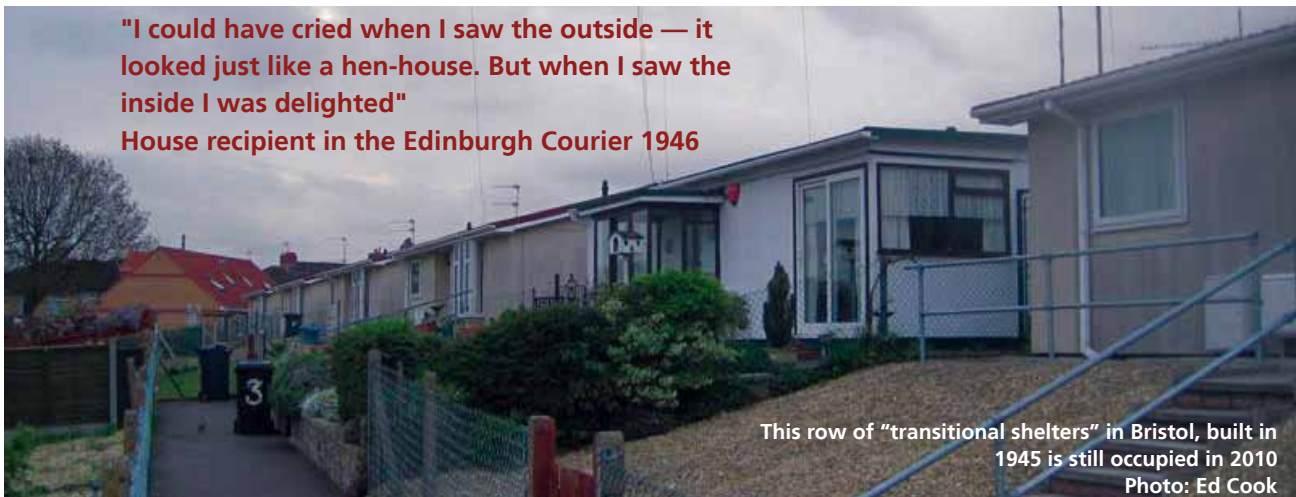
To meet the housing crisis of 1945 at the end of the second world war, the British government built 156,600 prefabricated houses as a temporary measure over the space of three years. 65 years later, many of these houses are still occupied. However the houses were comparatively expensive, and the programme failed to address the underlying issues of land ownership.

#### Strengths and weaknesses

- ✓ Large number of houses built in three years
- ✓ Many have remained in use, housing people for over 65 years
- ✓ Many owners preferred them to later housing schemes, especially multi-story projects, in later years.
- ✓ Houses came fitted with luxury modern conveniences such as fridges.
- ✗ Houses cost approximately twice the price of a traditional brick masonry house. Units costs were high.
- ✗ Due to multiple designs adopted, economies of scale, that were anticipated through mass production, were not made.
- ✗ Underlying issues of land ownership were not addressed in the housing policy.
- ✗ Detached bungalows, designed with the long side facing the road, required large building plots and excessive amounts of land.
- ✗ A steel prototype was rapidly developed by the

government to fulfil a political need. However it was later abandoned and as a result, significant funds were wasted.

- ✗ Use of asbestos later led to safety challenges when maintaining or demolishing houses.
- ✗ Production was much lower than originally expected.
- ✗ Funds were used for temporary rather than permanent housing.
- ✗ Temporary housing sites still needed the same infrastructure investment as permanent housing would have done.
- Land for the houses was allocated for 10 years. However many remain in use, 65 years later.
- The Ministry of Health (with key responsibility for housing) was against the provision of large-scale temporary housing, fearing shanty towns would be created.



## Background

Heavy bombing from August 1940 onwards left two and a quarter million people homeless in the UK. The deployment of V2 rockets left another 500,000 people homeless.

As an emergency measure after rocket damage, the government supplied UniSeco temporary huts and Orlit asbestos cement Nissen huts to provide emergency cover. Latrines were provided in blocks of two. An additional 8500 prefabricated houses were donated by USA in 1945. The cost of these temporary solutions quadrupled during the war.

Following the bombardments of 1941, and throughout the war, the housing shortage led to people having difficulties in finding houses, and landlords demanding large amounts of 'key money' before renting properties. The majority of people who had lost their houses were hosted by family members. Other people squatted disused buildings. At the end of the war homeless people illegally appropriated redundant army huts.

During the war, the post-war housing programmes had been delayed, due to strong opposition from landowners over the compulsory purchase of land that would be required. Land usage issues exposed the party political tensions within the coalition. Sidelining these issues meant that a housing policy was not in place at the end of the war.

When the war ended, large numbers of troops returned and a

general election was also due; the housing crisis became a critical issue on the political agenda.

Politically, the situation regarding housing was complicated by the involvement of different line ministries. In England housing was primarily the responsibility of the Ministry of Health, but additionally the Ministry of Public Works, the Ministry of Town and Country Planning, the Ministry of Supply, the Ministry of Production and the Secretary of State for Scotland all had responsibilities.

## Land ownership

Discussions over land prevented a housing reconstruction policy from being agreed in the aftermath of the war. As no political party in the government had a clear majority, discussions were held up between wealthier landowners and those wishing for a more equitable distribution of land.

The government wished to fix compensation for land at 1939 values. This was in a context of rapidly rising land prices and property speculation with the end of the war, and disagreement over betterment (betterment is when the price of land goes up after it has been granted of planning permission).

## Transitional houses

Prefabricated houses initially appeared to be a politically perfect solution. They would be owned by the government, mass produced in

redundant war-time factories and could be erected on bombed sites, avoiding some of the challenges for land acquisition.

A fact-finding mission was sent to United States of America to learn from the production of prefabricated shelters. In America, there was an existing industry building prefabricated mobile homes. This industry had grown significantly during the war.

The prefabricated shelters in America included permanent, temporary or demountable shelters, and portable trailer caravans, whose wheels would be removed once they were in place. Such houses were owned by the United States government with local government acting as owner representatives. Factories were producing over 2000 trailers per month.

In England however, there was no such industry, and a major investment in equipment would be required.

The approach chosen was to provide prefabricated structures with prefabricated fittings, including kitchen and bathroom units and plumbing systems.

## Beneficiary selection

Selection criteria for which families would be prioritised to live in the prefabricated houses were not clear.

### First prototype – the Portal House:

The first prototype developed in secrecy was a prefabricated single-storey house with two layer steel walls. There was an aluminium foil lining between interior and exterior walls. The houses were built on a concrete slab and had fitted steel furniture.



In cold weather, the steel prototype suffered severely from condensation. Boiling a kettle would cause condensation to run down the walls. In low temperatures, the condensation would freeze inside the walls. It also caused mould to form on items stored inside the kitchen furniture.

Despite initial commitments to build 500,000 of these shelters, it was discovered that production would enable a maximum of only 50,000 units in 3 years. An unexpected cost of 100 steel rolling machines that had to be imported was discovered after the Government had approved the first funds for the programme. A rising cost of coal also caused the price of steel to rise, and hence the total cost of these houses. As a result, production of this model was cancelled, in total at least 750,000 GBP had been lost with the programme.

### Later models

Following the failure of the first steel prototype shelter, four main types of house were later selected, which accounted for 90% of the final houses constructed:

- Arcon – concrete base, steel frame and asbestos cement exterior cladding. The walls were insulated with glass fibre and the walls and ceiling were covered with plasterboard. Nearly 40,000 were built.
- Pheonix and the UNI-Seco – based on a military design for an office. The frame was made of plywood and timber, with asbestos wall sections. Nearly 30,000 were built.
- Tarran - a wooden framed bungalow with precast concrete panel walls. Over 19,000 were built.
- Aluminium bungalow, including

the Airoh – all aluminium construction. Over 50,000 were built. The aluminium bungalow was the most expensive to produce at £1610.

### What happened next?

156,600 prefabricated houses were produced between 1945 and 1949, with an anticipated lifetime of 10 years. Each house was built on its own plot, a significant amount of land.

Of the prefabricated houses built, some have remained in use over 65 years, although many now fail the government's 'Decent Homes Standard'. In general there is now a policy of replacing prefabs, although this is moving into redevelopment of sites as it is cheaper to demolish and rebuild rather than continue to repair them.



The prefabricated shelters were expensive to build and required large plots of land. After 65 years of use, many are now being demolished as they are too expensive to maintain.  
Photo Ed Cook