Architect's Pocket Book of KITCHEN DESIGN

CHARLOTTE BADEN-POWELL

Architectural Press

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KITCHEN DESIGN

In loving memory
of my husbands

Francis Baden-Powell
and
Michael Brawne

both architects and both cooks
and
for whom I designed kitchens

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KITCHEN DESIGN

Charlotte Baden-Powell

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Architectural Press is an imprint of Elsevier

Architectural Press

Architectural Press
An imprint of Elsevier
Linacre House, Jordan Hill, Oxford OX2 8DP
30 Corporate Drive, Burlington, MA 01803

First published 2005

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloguing in Publication Data
A catalogue record for this book is available from the Library of Congress

ISBN 0 7506 6132 1

Printed and bound in Great Britain

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Preface

When writing the *Architect's Pocket Book* (first published in 1997), I realised that some subjects really could not be very well dealt with in only one or two pages. This was particularly so with kitchens, the design of which is a complex subject and which requires considerable detailed information.

So here is a pocket book about kitchen design which I hope will fill in the gaps. It is not a glossy manual, but rather a book of facts and figures which the designer needs to know. Architects know how to make things look stunning, but kitchens must also function well to be loved by their clients.

With the advent of television programmes and numberless books about gourmet cooking, more needs to be known about the room in which this is done.

Designers, be they architect, builder or homeowner do not necessarily have much cooking experience, so hopefully the planning procedures described will be of some help.

This book deals only with the design of *domestic* kitchens. Commercial kitchens are a specialist subject, catering for substantial numbers with a large workforce, so they bear little resemblance to a kitchen in the home.

The opening chapter is a brief summary of the long slow journey from open fireplace to modern cooker. It also shows the great social changes which have taken place in the last century which now enables one person, alone, to prepare, cook and clear away a family meal compared with the numerous servants needed in Victorian times.

The labour saving aspect of the modern kitchen has been made possible not only by the technological innovations of appliances

and gadgets, but also by supermarket provision of prepared meals and pre-washed vegetables.

In the last few decades, little real innovation has been made in appliances since the introduction of microwave cooking. However, the design and performance have considerably improved, some having many sophisticated features. Many now give greater attention to green issues such as fuel consumption and use of eco-friendly materials.

Greater standardisation of cabinets and appliances, at least in Europe, has lead to a wider choice and the ability to 'mix and match' items from different manufacturers.

The kitchen today is truly the hub of the family home. It is a place where chores other than cooking take place, where children play or do homework, and where parents spend a great deal of time. It also is the room upon which most money is spent and so deserves special attention.

I hope you will find this book both interesting and useful and that the resulting designs will be admired both for their efficiency as well as their looks.

Charlotte Baden-Powell

Acknowledgements

I am greatly indebted to the many manufacturing representatives of kitchen fittings for their advice and help.

The magazine *Which?* was also a very useful source for objective advice about kitchen appliances.

The Bibliography lists my main sources, amongst which I would single out the small paperback *Kitchens* by John Prizeman as being a classic.

The DoE series *Spaces in the Home* and the *Architects' Journal Activities and Spaces* are also invaluable.

My thanks also to Mary Tapping and Margaret Rixson for help with typing the manuscript.

1
History of the kitchen

Designing kitchens necessitates the integration of functional requirements, together with spaces which are pleasant to work in. Before analysing these needs it is worth looking back in time to see the antecedents of the modern kitchen. This will help to articulate and clarify the different activities needed to prepare complex meals and to realise how radically modern technology has reduced both the space and manpower needed to achieve this.

Early kitchens

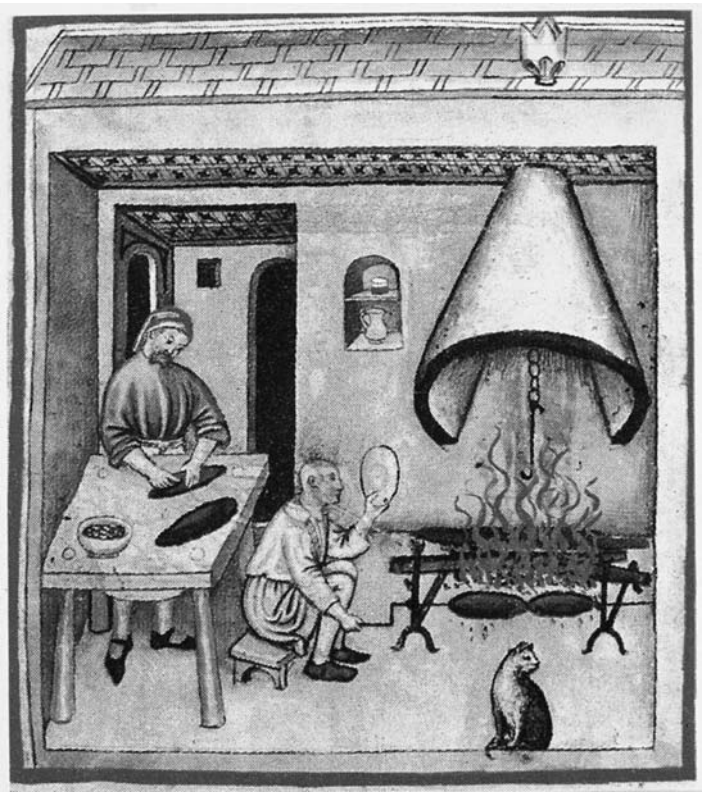
The earliest kitchens, all over the world, are simply open fires, most often out of doors which is still so today in countries with a climate hot enough all the year round to make this possible.

Central hearth with reredos in a croft Birsay in Orkney

In Britain, little is known about kitchens until Norman times. After the Romans left Britain in AD 407, the culinary arts were largely forgotten. Food was often cooked outdoors on cauldrons or spits. This was to avoid the risk of fire and to keep smells out of the houses.

The central hearth

In Saxon times, food was cooked on central hearths in large, high ceilinged halls. Smoke drifted out of unglazed windows or



Turnspit rotating meat by hand – Italian manuscript (15th century)

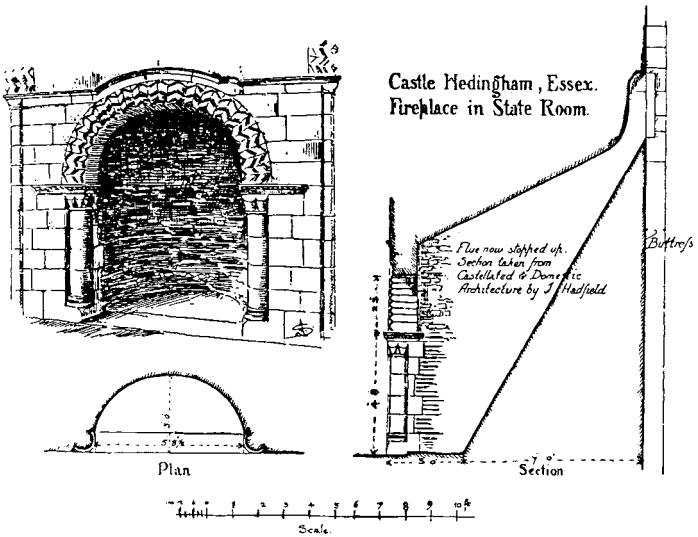
a hole in the roof. Everyone ate communally on trestle tables, with the lord sitting at the centre of a table set across one end of the hall, overlooking his household who sat at tables placed along the hall before him. Later on, the lord's table was often raised on a dais to become, literally, a high table. Close by *cupboards*, i.e. boards for cups, displayed the gold and silver demonstrating his wealth. *Andirons* or firedogs were used to support the logs on the hearth and were later incorporated into the wall fireplaces, and became a useful way to support a roasting spit. These spits were at first operated by human *turnspits*. Later, various mechanical means were developed, including clockwork devices and treadwheels turned by dogs.

Dog acting as turnspit in an Inn in Newcastle Emlyn
Aquatint by Thomas Rowlandson 1797

The advent of the chimney

Soon after the Norman conquest, the fireplace moved to the wall although the central fireplace continued right up until the fourteenth century. Moving the fireplace to an outside wall may have come about because of the impossibility of having a central fireplace in a building of more than one storey. This allowed the development of the flue to carry away the smoke

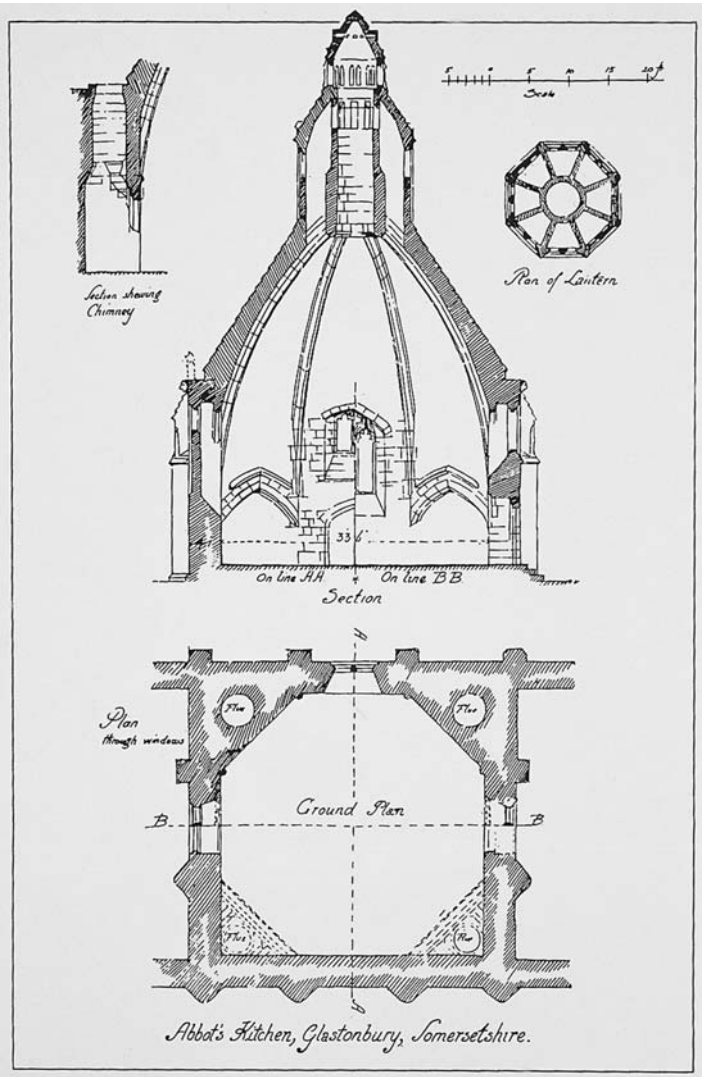
up to the outside air. At first these flues were funnels cut diagonally through the thick walls to an opening higher up on the outside of the wall. Later, tall cylindrical shafts were developed. The word 'chimney' comes from the old French *cheminée* meaning the fireplace or hearth, not the flue as in current usage. Despite the enormous advantage the chimney brought to eliminating smoke from the room, a tremendous amount of heat and smells was generated from spit-roasting meat for several hundred people. So from the fourteenth century, kitchens began to be separated from the great halls. These medieval kitchens were large with high ceilings, sometimes ventilated by louvers in the roof. A fine example of this can be seen in the Abbot's kitchen at Glastonbury.



Norman fireplace in Castle Hedingham Essex showing diagonal flue c. 1140. Drawing by L.A. Shuffrey from *The English Fireplace*

Fuel

Timber, preferably hardwood, was burnt on the fires, while the poor used dried dung and peat. In the sixteenth century, wood



Abbot's kitchen at Glastonbury Abbey *c.* 1340.
The four corner flues were gathered into the octagonal lantern
Drawing by L.A. Shuffrey from *The English Fireplace*

became scarce and *seacole* came into general domestic use. It was called 'seacole' because it was brought to London and the east coast towns by boat from the open cast pits in Durham and Northumberland. Coal cannot be burnt directly on a hearth, so the basket grate was developed to hold the coals.

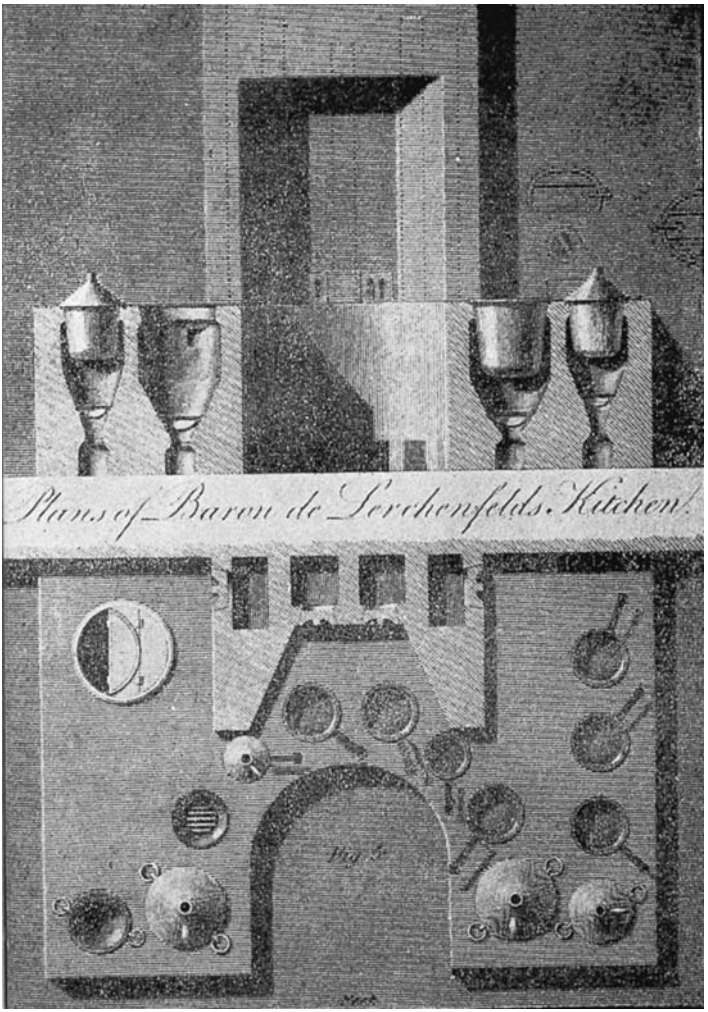
Early ovens

The first ovens were spaces made under brick or stone hearths, but they were soon moved into the return side walls of the open fireplace. These ovens, which can still be found in old cottages, were to bake bread. A fire was made inside using faggots and the door left ajar to allow the smoke to escape up the chimney over the adjacent fire. When the brick-lined oven was hot enough, the ashes were raked out and the loaves baked in the residual heat.

Development of the range

There were no innovations in ovens until the invention of the range, which was developed in the eighteenth century by men who were not professional stove makers but inventors such as Benjamin Franklin, Count Rumford and the missionary Philo Stewart.

In the late eighteenth century Count Rumford, an English physicist raised in America but living in Europe, wrote several far-seeing essays on the construction of kitchen fireplaces and utensils. He put forward the first idea for a kitchen range to supersede the open fire. He designed one fireplace for a Bavarian nobleman, which had several small fireplaces hollowed out of the masonry, and arranged in a horseshoe plan. The cook could stand in the middle and attend his pots, which were sunk into holes over the fires. By 1800, he had designed small cast iron ovens for poor families, and proposed roasting ovens set in masonry over a small fire below. He suggested the use of steam for cooking and also economising on heat by using stacked pans. Twin-walled steamers were suggested for the purpose of containing heat more efficiently.



Count Rumford's design for a kitchen for a Bavarian Nobleman 1797. Built of massive brick providing insulation. Pans were fitted into the top over an individual firebox with door to regulate air intake. Two roasting ovens and a hot water boiler were also included

By 1840 the range had been developed as a separate piece of furniture which no longer needed to be built into masonry. Sometimes, in larger houses, the range was brought into the centre of the kitchen, leaving the open fire in the old wall fireplace for roasting.

The Victorian kitchen

The Victorians still thought it desirable to keep the kitchen, with its attendant smells, well away from the gentry end of the house. In grand homes, kitchens were positioned in the centre of the servants' wing, surrounded by the smaller rooms of the scullery, larder and pantry with separate stores for game, fish, ice and coal. These would be adjacent to the servants' hall with separate rooms for the cook, butler and housekeeper.

Great kitchen in the upper ward of Windsor Castle *c.* 1855.
The kitchen has been modernised by bricking up the fireplaces at the side leaving only one oven at the far end wall. Gas lighting has been installed over the work stations

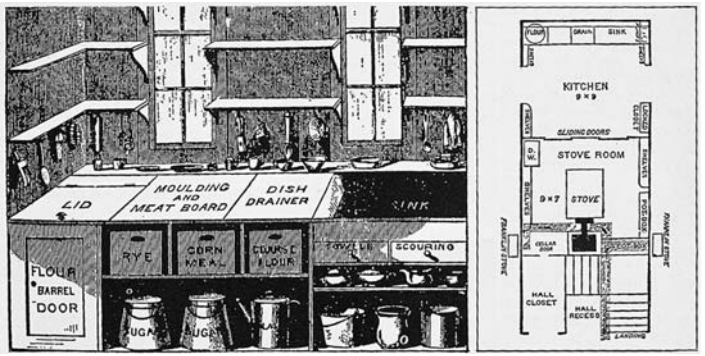
The importance of the house could be judged by the number of chefs presiding over numerous kitchen maids. Kitchens were full of cooking devices such as roasting ranges, stewing and boiling stoves, turnspits and hot cupboards. However, there were no mechanised devices for washing, ventilation or refrigeration. Water was pumped by hand into scullery sinks and food was kept cool in an *ice box* with ice brought in from an *ice house* outside. Most food was still kept in north facing larders with natural ventilation.

The big change in kitchen design came about due to the social implications of the industrial revolution and the development of mechanisation.

Three iceboxes dating from 1800

Catherine Beecher

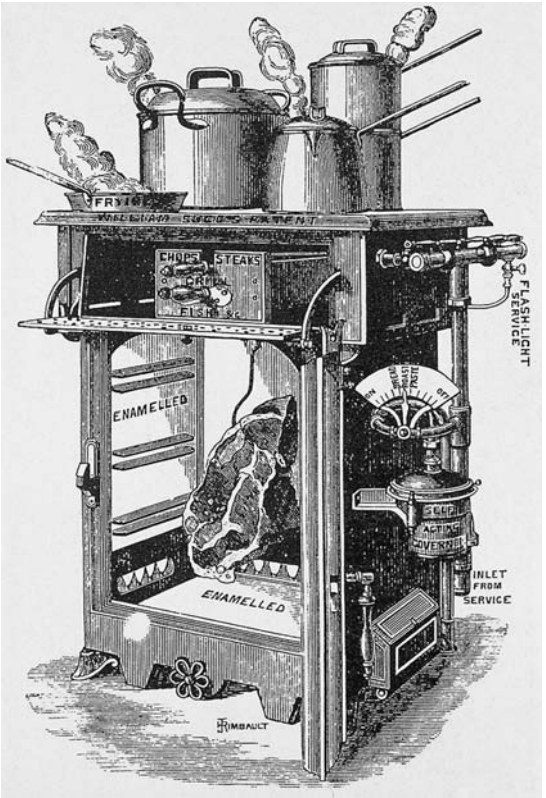
Alongside these early technological innovations, society was changing fast due to the advent of the industrial revolution which provided work for country girls who would otherwise have gone into service for middle class families. These social trends were recognised in America by a truly remarkable woman called Catherine Beecher (sister of Harriet Beecher Stowe). She was a reformer and early feminist. In 1841 she published a *Treatise on Domestic Economy*, which was a text book for girls schools which met with great success. She blamed many women's disappointments on the fact that they were not trained for their profession. She also remarked on the paradox of having servants in a democratic society, and suggested that housework should be divided up amongst members of the family. In 1869, she wrote *The American Woman's Home* in which, with amazing foresight, she proposed a kitchen where the central table and isolated dresser have disappeared. Instead she has a row of compact working surfaces arranged at waist height along the wall, properly lit by windows. To avoid discomfort in the hot American summers and because, unlike in Europe, bread was still mainly baked at home, the range was positioned in a separate room divided from the preparation area by sliding doors.



Kitchen layout advised by Catherine Beecher in 1869

Gas cooking

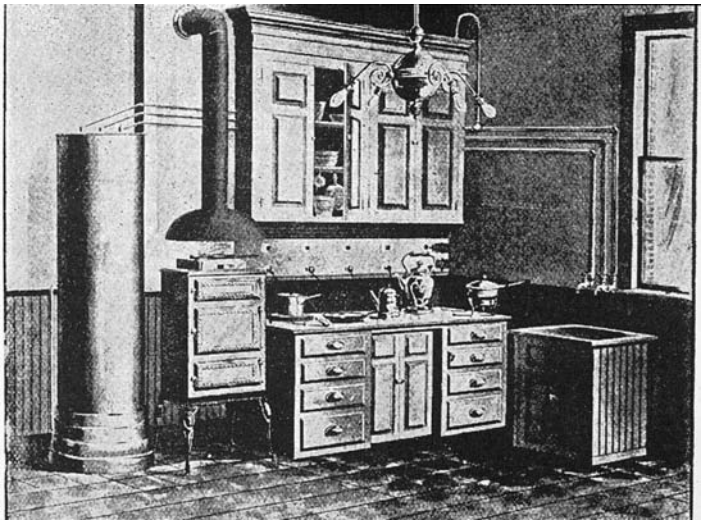
Gas cookers were invented in the first decade of the nineteenth century but were not in general use until 1850. At first they were regarded with great suspicion – people feared explosions, poisoning or food tasting of gas. To begin with they were used in hotels and institutions, but it was not until 1924 that an oven regulator or thermostat appeared which made possible, for the first time, the accurate control of the temperature of the oven. The other great advantage was that the gas cooker did not need a flue, so could be placed anywhere within a room, even in a room without a fireplace.



Charing Cross gas kitchener c. 1850

Electric cooking

Electric cooking appeared in England in 1890, but was slow to develop due to the sporadic nature of the electrical network. However, as electricity became more generally available at lower prices, electric cookers slowly began to be more commonplace, but were not in general use until 1930.

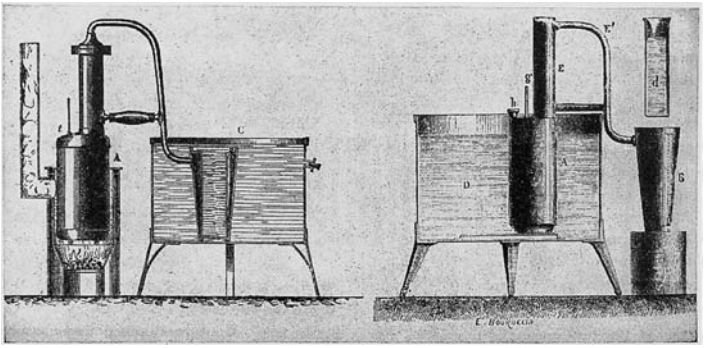


Electric kitchen at the Chicago Exhibition 1893

Appliances with electric motors

Before domestic electric appliances could be developed, two prerequisites were needed: a reduction to a compact, moveable size, and the introduction of a small built-in electric motor with a sealed motor housing and thermostatic controls. It was not until these were available that refrigerators, ventilator fans and washing machines were made possible.

In 1860, Ferdinand Carré produced a forerunner of the *refrigerator* using ammonia as its refrigerant, but it was not until the 1920s and 1930s were these in general production. Indeed, it was not until World War II that the *freezer* was developed.



Refrigeration plant by Ferdinand Carré 1860

Similarly, a hand-turned *dishwasher* was patented as early as 1865 but it had to wait until the 1940s before modern dishwashers were mass produced.
Waste disposers or 'electric sinks' as they were curiously called at first, were invented in 1929 and in production in the US by 1935.

Early twentieth century

During the early part of the twentieth century up until the outbreak of World War I, kitchen design progressed very little. Then the supply of female servants dwindled dramatically as many found work in factories, which many women preferred as it brought in more money and gave them greater independence. So, gradually, the middle classes had to start managing without so much help. New gadgets and equipment were invented and the old cast iron ranges were replaced with gas or electric cookers. In the 1930s, the well-insulated solid fuel Aga and Esse cookers were developed, and were often adopted where mains gas was not available.