

A TRIBUTE TO THE MEMORY OF

BRITA ÅKERMAN

1906–2006



CARIN BOALT

1912–1999



BY PROFESSOR ARNE KAIJSER AND TEKN. DR ULRIKA SAX

ROYAL SWEDISH ACADEMY OF ENGINEERING SCIENCES (IVA)

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PRESENTED AT THE 2013 ANNUAL MEETING
OF THE ROYAL SWEDISH ACADEMY OF ENGINEERING SCIENCES

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The Royal Swedish Academy of Engineering Sciences (IVA) is an independent, learned society that promotes the engineering and economic sciences and the development of industry for the benefit of Swedish society. In cooperation with the business and academic communities, the Academy initiates and proposes measures designed to strengthen Sweden's industrial skills base and competitiveness.

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FOREWORD



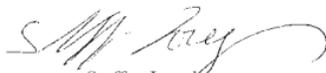
Every year the Royal Swedish Academy of Engineering Sciences (IVA) produces a booklet commemorating a person who was active in Sweden and whose scientific, engineering, economic or industrial achievements were of significant benefit to the society of his or her day. The person to be recognised in the booklet must have been born least 100 years ago. The Commemorative Booklet is published in conjunction with the Academy's Annual Meeting.

This year two sisters, BRITA ÅKERMAN and CARIN BOALT, née Åkerman, who played a pioneering role in modernizing Swedish homes and rationalizing housework, are commemorated in the booklet. Brita was the initiator of the Home Research Institute that was established in 1944, and Carin was the research leader at the Institute during its 12 years of existence. The research focused on how to improve the design of kitchens and household appliances and the working conditions for housewives. It not only affected the daily conditions of millions of families but also had importance for the Swedish building industry and for producers of household appliances. In 1964, Carin Boalt was appointed

professor in Building Functional Analysis in Lund and became the first female professor at a technical university in Sweden. Brita Åkerman received an honorary doctoral degree at Chalmers Technical University in 1979 for her efforts to develop good homes and items for everyday life.



Björn O. Nilsson
President of the Academy



Staffan Josephson
Chairman of the Medals Committee

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THE SISTERS WHO TRANSFORMED THE SWEDISH HOME

8

In autumn 1943 some unusual experiments were performed in a basement in Stockholm's Tomtebodavägen district. Female test subjects were attached to equipment that measured their oxygen absorption while they performed three common household tasks: washing up, baking and cleaning. The women did the washing-up and baking at sinks and work surfaces at different heights and the cleaning either standing or kneeling. By analysing oxygen absorption, the scientists conducting the experiments could calculate energy consumption. They found that washing up and baking were done most efficiently at a work height of 85 cm and that cleaning while standing up took longer, but was significantly less taxing than cleaning while kneeling.

These experiments were part of a process of setting up a new research institute, *Hemmens Forskningsinstitut*, HFI (Home Research Institute), which was formally launched six months later in April 1944. It was established by a number of women who wanted the home to be recognised as a work place and housework as economic activity. They pointed out that all the homes combined constituted Sweden's largest work place by far, with 1.2 million women occupied there conducting numerous tasks, such as preserving and preparing food, cleaning, washing and mending clothes, and not least, caring for children



Occupational physiology study of washing up, autumn 1943. Photo: Nordiska museet.

and the elderly. They wanted a research institute that would develop better, tools, more efficient methods and homes, and in particular, kitchens that were better suited for the work being done in them.

Two sisters played a critical role in the creation of the Home Research Institute. Carin Boalt, née Åkerman, was responsible for the experiments described above with washing up, baking and cleaning and, in the decade that followed, was head of the institute's research activities. Her older sister, Brita Åkerman, was the driving force behind the birth of the institute; she was successful in getting influential people and organisations involved and working together to establish the new institute. They ranged from housewives' associations, political women's associations and home economics teachers' organisations, to architects, rationalisation experts and also the Royal Swedish Academy of Engineering Sciences (IVA). The two sisters complemented each other: Brita was the visionary who inspired others, while Carin was the practical one who got things done.

This booklet presents the sisters and their lifelong work in transforming the Swedish home and rationalising housework. It starts with an account of their backgrounds, before returning to their joint efforts with the Home Research Institute and then their subsequent careers; Carin as the first professor of Building Function Analysis and Brita as investigator working on government and municipal commissions.

FAMILY BACKGROUND

Brita Åkerman was born on 30 March 1906 on the Stora Molstaberg estate in Sörmland. Her parents were Lydia and Carl Åkerman. In 1909 sister Else was born and three years later in 1912, Carin was born. Stora Molstaberg was owned by Lydia's father, Anders Petter Löfström, a businessman and founder of the town of Sundbyberg. He handed over the management of the estate to his son-in-law in 1906 and, when he died three years later, Lydia inherited the estate. Carl Åkerman was interested in mechanics and built a power station and a factory that made fences, but he knew nothing about farming. In 1918 he was forced to sell most of Stora Molstaberg including the farmland, but the family was able to keep a small estate called Lilla Molstaberg.

Lydia used the proceeds from the sale to buy a property in the smart Stockholm neighbourhood of Östermalm. Lydia was eager for her daughters to get a higher education so they could support themselves and not be dependent on future husbands. As soon as the first year of school ended in their home village, the sisters were placed in a primary school in Östermalm, and during term time Lydia lived with the girls in Östermalm. The girls went on to attend *Nye Elementarskolan*, an upper secondary school for girls, also located in Östermalm. Brita studied classics and graduated in 1925. Else also studied classics, graduating in 1928, while Carin chose to study natural sciences and graduated in 1931.

Financially things continued to decline and in 1928 when Carl was forced to sell the property to his brother Gustaf, Lydia moved permanently to Östermalm with her daughters, while Carl moved to Borås where he purchased a folding ruler factory. The three sisters who had grown up with animals in the countryside, who were used to riding horses, wandering in the forest, picking berries and fishing, had to leave their rural roots behind. They also lost almost all contact with their father, who died in 1931. “When I was 16 my childhood ended,” Carin Boalt wrote much later in her memoirs.



The family gathered around a car at Lilla Molstaber 1919: The sisters Else, Brita and Carin with their parents Lydia and Carl Åkerman. Photo from a private collection.

BRITA'S EDUCATION AND EARLY CAREER

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*School graduates
Else, Brita and Carin
Åkerman at Carin's
graduation in 1931.
Photo from a private
collection.*

After graduating from school, Brita first studied French and then English at Uppsala University. She spent one term at the Sorbonne in Paris. In autumn 1928 she gained her Bachelor of Arts in Uppsala and continued studying the history of literature at Stockholm University. She began researching Stockholm writer and journalist Oscar Patrik Sturzen-Becker under the pseudonym Orvar Odd and in 1933 she gained her licentiate degree. Alongside her studies she worked as a freelance journalist. She wrote articles and reviews in the daily newspapers Svenska Dagbladet and Östgöta Correspondenten and in the magazine Idun.

The research tables at *Kungliga biblioteket* (National Library of Sweden) were a popular meeting place for Stockholm University students. Here Brita met her future husband Alf Johansson in spring 1932. Alf was a doctoral candidate in economics and had a research assistant position at the university. But he also had a great interest in literature and history and was very much involved in social and political issues. The trade union movement recruited him to teach on a regular basis at the LO (Swedish Trade Union Confederation) school in Brunnsvik and he gave frequent lectures for ABF (Workers' Educational Association). After a few months, Brita became pregnant. The couple married in autumn 1932 and moved to a HSB (housing cooperative) flat in downtown Stockholm.

Meeting Alf changed the way Brita saw the world. She had grown up in a family with a fairly conservative outlook and her main interest had been modern French, English and Swedish literature. Before she met Alf she had been quite ignorant of the social and economic conditions in Swedish society. When she married Alf she was brought into a radical

intellectual circle of economists, architects and writers. She got to know Alva and Gunnar Myrdal who were old friends of Alf, and Dag Hammarskiöld, a doctoral candidate at the same time as Alf who shared his interest in the new writers. Architect Uno Åhrén was another good friend of Alf. For Brita, getting to know Alva Myrdal was particularly inspiring. She admired Alva who, with her husband Gunnar, wrote a polemical book called *Kris i befolkningsfrågan* (Crisis for the Population Problem) which was published in 1934 and had a strong impact on the political debate. Alva encouraged Brita to get more involved in socio-political issues.

After he defended his thesis in 1934, Alf was appointed as docent (associate professor) and was immediately engaged as head secretary for the Government's newly formed housing commission (*Bostadssociala utredningen*). He held this position for twelve years and became one of the main architects of the Social Democrats' housing policy. Brita was also keen to continue her professional career after she married and despite giving birth to no fewer than five children between 1933 and 1944. Luckily HSB had opened a crèche in the building where they lived and Brita only needed to go up two floors to leave her children there during the day. As the family grew, they moved to a larger flat and in 1939 to a new house in the suburb Stocksund. The children attended nursery school and school in the neighbourhood and Brita employed a housemaid to help with the housework.

Brita worked first as a substitute teacher and freelance journalist. In 1936 she got a job at the Fredrika Bremer Association, a women's rights organisation, and was put in

charge of organising courses. She also contributed to the journal *Hertha*. “The Fredrika Bremer Association was my women’s rights university. That was where I gained a thorough understanding of women’s lives in society and what they were trying to do together to change their situations,” wrote Brita many years later in her memoirs. This is also when she got to know Elin Wägner, a journalist and author who was 25 years her senior. Elin was a prominent figure in the Swedish women’s liberation movement and had fought for



The Åkerman-Johansson family on the couch in their living room in the Stocksund house, 1946. This is where all five children grew up and Alf and Brita remained in the house for the rest of their lives. Photo from a private collection.

women's suffrage and better female representation in public life. She pleaded for a society with more human dignity and better conditions for women and children. Inspired by Elin Wägner's work, Brita became a driving force on a committee to increase female representation, which in 1938 gathered all of the women's associations for an intense campaign to have more women in political life. Brita asked Elin to write for the campaign. Although this did not happen, they continued to have frequent contact and exchanged many letters about Elin's work on the polemical book *Väckarklocka* (Alarm Clock), which was published in 1941. They both agreed that change in the situation for women must be based in an insight into the reality of women's lives.

While working for the Fredrika Bremer Association, Brita started taking courses at Stockholm University in sociology, a new subject at the time. She floated an idea for a research project on the way in which different types of families lived in their homes. She

Election flyer made by the Committee for increased women representation, 1938.



managed to get two of her professors at the university enthusiastic about her idea and contacted Sven Wallander, head of HSB, who she had become acquainted with through Alf, to see if HSB would fund the study. Wallander quickly gave her a positive response and put 14,000 kronor at her disposal. Things moved quickly and 214 families who lived in small flats agreed to participate in the study. They were paid five Swedish kronor each and the housewife in the family would keep a record for a week of what each member of the family did, what time they did it and in which room. Four social workers visited the families, handed out questionnaires, drew sketches of the flats and interviewed the housewives. A huge amount of material was gathered in this way, but when it was time to process the information, Brita was unexpectedly the only person left in the project group; with war approaching, the other two had moved to the United States. She had to work on the material in her spare time, and in 1941 she finally finished her book entitled *Familjen som växte ur sitt hem* (The family that outgrew its home). It was the first sociological study of life in the Swedish home and drew attention to the cramped conditions in which many families lived, how fragmented housewives' days were and how they were tied down by all of the housework. It was published at the same time as a furniture exhibition arranged by HSB and attracted a lot of positive attention, including an extensive review by Elin Wägner in the national daily newspaper Dagens Nyheter.

After the war broke out in 1939 Brita got a new job at the Government's newly-formed commission on wartime economy, *Krishushållningskommittén*. Karin Kock, an economist, Social Democrat and expert advisor to the Ministry of Finance, employed Brita to run a

campaign to provide information to housewives and households on economizing in times of scarcity. The information campaign, which was called *Aktiv hushållning* (Active Economizing), was assisted by researchers and various experts, in particular, knowledgeable home economics teachers. Numerous brochures, radio programmes and films were produced giving advice on how to, for example, preserve fruit, berries and vegetables, repair torn clothing and shoes, and how to manage the household budget. In 1941 Brita was given another assignment at a Government commission on population issues, *Befolkningsutredningen*, headed by Tage Erlander, at the time State Secretary at the Ministry of Social Affairs and from 1946 Prime Minister. All of the members of the commission were men and in order to include the expertise of women, Erlander appointed a female delegation to complement it. Brita was appointed its secretary. The delegation was tasked with studying the working conditions in the home, vocational education for housewives and issues relating to help in the home. Brita saw her work with the commission “as an opportunity to really get to grips with women’s issues and give them a kind of ‘governmental authority’.”

Brita’s husband Alf Johansson discussing housing politics with Tage Erlander and Gustav Möller.



CARIN'S EDUCATION AND EARLY CAREER

Unlike her two older sisters, Carin Åkerman chose a natural sciences programme at upper secondary school and she considered becoming a doctor. But the family was not in a strong financial position and there was no money to pay for a long education in medicine. After graduating from upper secondary school in 1931, she instead started studying zoology at Stockholm University. One of her classmates was Gunnar Boalt, who, according to Carin, “immediately monopolized me and effectively prevented other young men from getting to know me.” Three years later she graduated with a Bachelor’s degree in

Carin and Gunnar around 1932. Photo from a private collection.





*The three sisters with their extended families gathered at a dinner the day after Christmas, 1939.
Photo from a private collection.*

botany, zoology and chemistry and a year after that, in 1935, she received her Master's degree. The same year Carin and Gunnar got married.

Gunnar had studied the same subjects and they both worked as substitute teachers at various country schools for a few years. In 1936 Carin took a course in nutrition at Stockholm University, which led to a job at *Kooperativa Förbundet – KF* (Cooperative Union) running a large study on eating habits. She started the job just two weeks after delivering her first child. Since the family lived just up the street from KF's head office, she was able to go home and breast feed her baby during the day. Gunnar worked in Hallsberg, three hours train ride from home, and lived only part of the time in Stockholm, but there was a maid living with the family. In December 1939, just after Carin had given birth to her second child, she took a job as assistant to physician and professor, Ernst Abramsson, head of the newly-formed *Statens institut för folkhälsa* (Government Institute for Public Health) located in Tomtebodavägen, which had a food hygiene department. During the war the institute started working closely with the Active Economizing programme, where Carin's sister Brita worked.

The Boalt family grew quickly. Carin and Gunnar had another three children and moved to a larger flat close to the Institute of Public Health. Gunnar became ill with pulmonary tuberculosis during the war and spent his convalescence studying philosophy and sociology. In 1943 he received a Licentiate degree in practical philosophy and four years later he gained his PhD and became an associate professor. In spring 1947 the family moved to a house in Stocksund, not far from Brita's home.

The three sisters, Brita, Else and Carin were very close. Between them they had twelve children. Their husbands, Alf Johansson, Gösta Rehn and Gunnar Boalt were prominent academics with high-level positions in public administration and academia. The first two were economists with close ties to the Social Democratic movement. After the war Alf became Director General of the Swedish Housing Board (*Bostadsstyrelsen*). Gösta Rehn was an economist for the Swedish Trade Union Confederation (LO) and together with Rudolf Meidner developed the so-called Rehn-Meidner Model for full employment and low inflation. Gunnar was given the first chair in sociology at Stockholm University in 1954. Alf and Gösta also concluded their careers as professors at Stockholm University. As Carin later wrote, the three men were, “...obviously impractical and unable to execute anything to lighten the load of household chores, while their children’s mothers worked all of their waking hours during their holidays alongside the maids.”

THE HOME RESEARCH INSTITUTE IS ESTABLISHED

The war with the accompanying draft and rationing made life very difficult for Sweden's housewives, and a number of organisations and committees were formed to try to support them. Government initiatives in the form of Active Economizing and the Women's Delegation described above were important arenas where leading representatives for women's organisations and experts of various kinds could meet to discuss the housewives' situation. Two new associations were formed in 1940; the four biggest women's organisations formed *Husmödrarnas samarbetskommitté* (Housewives' coordinating committee), and three organisations for home economics teachers and home consultants joined forces to form *Hushållsläraryrinnornas samorganisation*. These two bodies would play a key role in the establishment of the Home Research Institute. In 1942 the home economics teachers' association formally raised the issue of a research institute at a board meeting. They contacted the housewives' coordinating committee and together they approached KF and received a grant of 20,000 Swedish kronor to start planning a research institute.

Brita Åkerman, who at this point had built an extensive personal network within women's organisations, the Social Democratic Party, the Government offices and academia, was a coordinating and driving force in the efforts to establish a research institute. The aim was to take a holistic approach, to study the actual circumstances of housewives, to

find out how they themselves wanted to change their situation, and to help develop better tools and appliances for housework and more practically designed kitchens and homes.

In autumn 1943 there was discussion about a more concrete focus for the proposed institute's research at a number of seminars to which some men with relevant experience were invited. They included Tarras Sällfors, professor of Industrial Organisation and Economics at the Royal Institute of Technology (KTH) in Stockholm and the leading figure in the Swedish rationalisation movement; Ragnar Nilsson, a leading biochemist and rector of *Uttuna Lantbrukshögskola* (university of agricultural sciences); Ernst Abramson who was a physician and head of the new Institute of Public Health; and Gotthard Johansson, Vice Chairman of *Svenska slöjdföreningen* (the Swedish Society of Industrial Design) and a driving force in its housing study. One important conclusion drawn from all of the seminars and discussions was that the new institute would need a staff with diverse expertise: scientists who had studied nutrition, home economics teachers with experience from domestic and large-scale households, and architects and engineers with knowledge of building construction and development of household appliances.

When the idea for a research institute focusing on the home begun to take shape, Carin was working with public health. At the same location were some young architects working on a new housing study commissioned by *Svenska slöjdföreningen* (the Swedish Society of Industrial Design) and *Svenska Arkitekters riksförbund* (the National Association of Swedish Architects). They were studying the plans of flats for families with children and had set up a test kitchen in the basement, paid for by HSB. It was in this test kitchen that the oc-

Test kitchen in the basement of the Institute of Public Health.

Photo: Nordiska museet.



cupational physiology studies described above of washing-up, baking and cleaning were carried out with Carin in charge. This was a flying start for the Home Research Institute.

Meanwhile there were also discussions about statutes, a board and not least how the proposed research institute would be funded. In October 1943 an application was submitted to the Wallenberg Foundation for a grant of 500,000 kronor. Attached to this application were letters from a dozen or so prominent individuals who attested to the importance of the planned home research, including State Secretary Tage Erlander, IVA's President Axel F. Enström, and professors Tarras Sällfors and Ernst Abramsson. The application was, however, rejected by the Wallenberg Foundation citing tax reasons. The focus then shifted to the possibility of getting funding from industry organisations, and some positive signals were received. A decision was then taken to formally form the Home Research Institute (HFI). This took place at a statutory meeting on 24 April 1944 when representatives for the housewives' and home economics teachers' organisations established the statutes for the new institute. Its mission was formulated as follows:

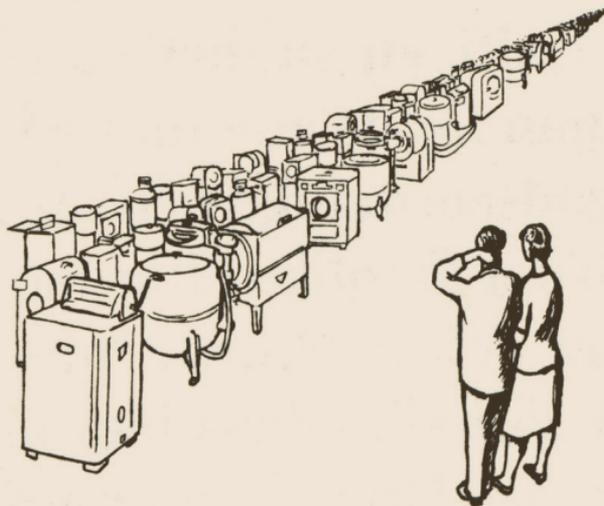
“The mission of the Home Research Institute is to work towards systematic rationalisation of working conditions in the Swedish home through research into the technical and economic issues associated with work tasks in the home as consumption centres and work places, taking into consideration the psychological, hygienic and social issues associated with general work tasks in the home.”

According to the statutes the board would consist of a total of ten representatives from the housewives' and home economics teachers' associations. They would be joined by seven more elected members who had shown a particular interest in the institute's activities.



*The first board of the Home Research Institute (HFI) consisted of thirteen women and four men.
Photo: Nordiska museet.*

Marknadsöversikt
Tvättmaskiner
1955



Utgivet av

HEMMENS FORSKNINGSPÄTTUT OCH HUSMODERSFÖRBUNDET

*Report on washing
machines made by HFI*

The first board consisted of thirteen women and four men, namely the four who had participated in the seminars the previous autumn. Tarras Sällfors resigned after a year and was replaced by IVA's President Edy Velandar who had a strong interest in the HFI's research activities. For ten years he had been the head of *Föreningen för Elektricitetens Rationella Användning* – an association dedicated to the efficient use of electricity – which had worked intensely on introducing electrical household appliances into Swedish homes. Gertrud Wiklund from the Housewives' coordinating committee was elected as chairman. The board also had a working committee consisting of five individuals which was chaired by Brita Åkerman. Carin Boalt was appointed head of research.

The day after the institute was established, representatives from the new board approached the Government, and asked for an annual state subsidy of 50,000 kronor. Two weeks later the request was granted on condition that the institute secured funding of the same amount from industry or other organisations. The Government had similarly approved state subsidies to a number of new industrial research institutes on condition that industry contributed an amount equivalent to the Government funding. But in those cases the Government had also insisted on appointing half of the board members for the institutes. The HFI had managed to get the state subsidy without the Government having any say in the composition of its board. The first year the institute received 42,000 kronor in private funding, 20,000 of which came from Kooperativa Förbundet (KF). The Government matched that funding and the 84,000 kronor was sufficient to employ ten individuals with diverse backgrounds. Now the institute's work could get started in earnest.

HFI'S ACTIVITIES

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One aim of the new institute's research was a continuation of the occupational physiology studies of housework as described above in the introduction. These studies were inspired by similar studies of forestry and farming work conducted by *Statens maskinprovningar* (the Government's equipment testing institute), for the purpose of designing new forestry and farming equipment taking into account exertion and strain on the users. HFI wanted to use the occupational physiology studies to develop methods, tools and working environments that would reduce the stress and strain on housewives. They found that work surface height was particularly important in this context and that the kitchens in most Swedish homes were poorly designed, forcing housewives bend over while, for example, washing up, which placed a lot of strain on the body.

Another source of inspiration for HFI was industrial work studies. In the interwar period Fredrick Winslow Taylor's ideas had a breakthrough in Swedish industry, and Tarras Sällfors was the principal standard bearer for the new ideas. In particular, he pleaded the case for introducing piece rate pay to increase productivity, and as a basis for this, careful time and motion studies of various work tasks. HFI also started conducting time and motion studies of various housework tasks, although not, of course, as a basis for setting piece rate pay. Instead, the idea was to compare time spent on washing up by

hand compared to using a dishwasher, or preparing food from scratch compared to using manufactured products like tinned, powdered or frozen foods. The purpose was to be able to give housewives sound advice and recommendations when they were considering purchasing appliances or food products.



Time and motion study of food preparation in HFI's test kitchen. Photo: Nordiska museet.

One of HFI's important research areas was kitchen design. In the 1930s people were realising that the kitchens in most Swedish homes were highly impractical. HFI constructed a number of test kitchens and asked test subjects to prepare typical meals in them. The researchers carefully observed the test subjects' methods, how they moved around the kitchen, which work surfaces they utilised and how much time they spent on various tasks. They varied the height of sinks and cupboards and the design and placement of stoves and refrigerators in an effort to develop highly functional kitchens. Particular attention was paid to ensuring that several people could work in the kitchen at the same time. Meanwhile, similar studies were carried out of food preparation in "real" kitchens and housewives filled out questionnaires to express their opinions on a more desirable design in future kitchens. One of the main wishes expressed by the women was that they wanted a bigger kitchen with space for a kitchen table. The results were compiled in 1952 in a book entitled *Kök, planering, inredning* (Kitchens, planning, design). 15,000 copies were published and the book was subsequently reprinted a number of times.

The book had a significant impact on how kitchens were designed over the next 50 years. Anyone who has prepared food or washed dishes in an old-fashioned kitchen understands the great significance of raising the level of sink units and other work surfaces, the practical placement of the stove, refrigerator, sink and cupboards, and the introduction of hard-wearing and easily maintained materials. The fact that HFI's kitchen studies had such a huge impact was linked to the housing policy that Brita Åkerman's husband Alf Johansson was instrumental in developing. An important aspect of this policy was favour-



Photo of work in HFI's test kitchen taken with a slow shutter speed to register the movements of the test subjects. Photo: Nordiska museet.

able government loans to stimulate home construction. But in order for property developers to get government loans, the homes were to be of a high quality and meet certain standards. HFI's study findings were quickly incorporated into the standards and, when the most extensive housing construction in Swedish history took place in the '50s, '60s and '70s, all of the kitchens were designed according to these standards.

At the end of the 1940s HFI wanted to launch more in-depth research on cleaning, laundry and washing up. The institute also wanted to study, among other things, different flooring materials from a cleaning perspective and to test vacuum cleaners, washing machines and dishwashers. For that they needed a lab with modern equipment which HFI did not have at its own premises. Edy Velander asked HFI if the institute wanted to rent space in IVA's new research station at Drottning Kristinas Väg, right next to the Royal



The HFI laboratory at IVA's research station at Drottning Kristinas Väg. Photo: Nordiska museet.

Institute of Technology (KTH), and a significant portion of HFI's activities would subsequently take place at that location during the first half of the 1950s. Another important tenant at the research station at that time was Aktiebolaget Atomenergi, a state-owned company formed to develop and introduce nuclear power in Sweden. While Carin Boalt and her colleagues tested various types of vacuum cleaners and dishwashers, Sweden's first nuclear reactor, R1, was being built in an underground room 40 metres below them.

Some of the appliances tests were commissioned by the industries that manufactured them, and sometimes HFI researchers' results were controversial. In 1951 HFI published a report that presented a study of 30 or so vacuum cleaners and the conclusion was that none of the models was very good. The report asked for very specific improvements to be made to the various models. It resulted in heated discussion with domestic manufacturers and importers. HFI's biggest source of funding, KF, in particular had a strong reaction. Carin Boalt was called before KF's board to explain the criticism of KF's new vacuum cleaner, the Hugin. She demonstrated how the Hugin vacuum cleaner's design forced the user to work in uncomfortable positions and she managed to convince the board that changes were needed. The modified Hugin would later become one of the leading vacuum cleaners on the market.

This was also the time when the first dishwashing machines were introduced. When HFI's researchers conducted a study of eight dishwashers, some of their conclusions were very critical; for example, that "none of the machines studied can at this time be considered satisfactory /.../ taking into account their cleaning effect, consumption of water and time

as well as their operating cost.” The tough criticism was a factor in the disappearance of dishwashers from the market for several years before returning significantly improved. Domestic manufacturers of household appliances such as Electrolux and KF eventually started appreciating HFI’s critical studies of their products. The tests were conducted with a high level of integrity and were based on a thorough understanding of the

Testing a vacuum cleaner’s reachability. Photo: Nordiska museet.

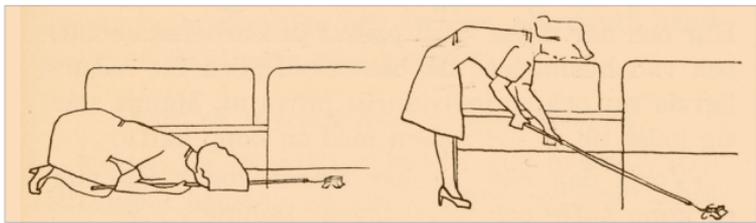


potential users and what they wanted. The manufacturers realised that HFI's scrutiny could lead to important improvements in their products.

HFI's employees were very keen to spread information on the results of their research, especially to housewives and home economics teachers. At first they reported the results of their studies in special research reports intended for home economics teachers, home consultants, product developers and other experts. But they also summarised the results in a series of brochures aimed directly at housewives. HFI also produced exhibits on its work which toured Sweden, and the employees were often out giving lectures to housewife associations, home economics teachers and others with an interest in the subject. The institute also received many visitors, around 1,000 a year.

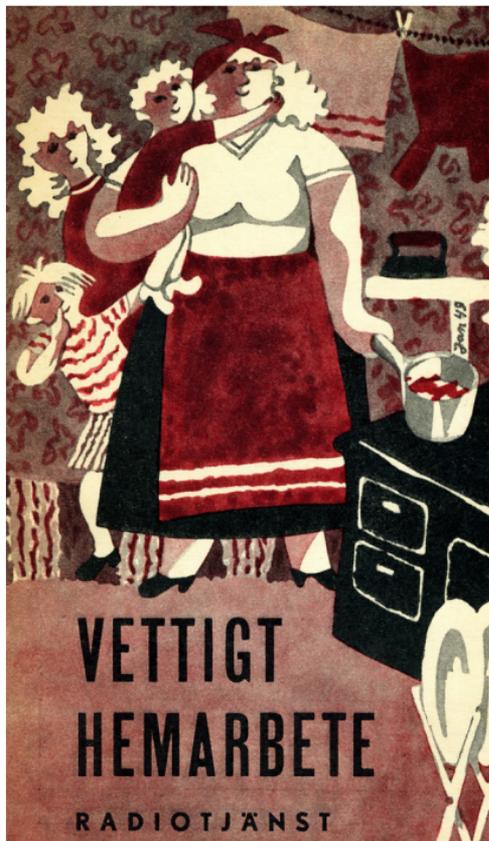
HFI also established a good relationship with the mass media and arranged press conferences when new reports were published. Daily newspapers and women's magazines often covered the institute's work. *Sveriges Radio*, Sweden's public radio, produced many radio programmes for housewives and they were happy to put representatives from HFI on the air. In a popular programme called *Husmorskolan* (Housewife School), a whole se-

*Illustration from
the book Vettigt
hemarbete,
1950.*



ries of lectures by HFI employees was broadcast under the heading “Sensible Housework,” and the lectures were also compiled in a book with the same title. HFI even used TV to spread its message. At the beginning of the 1950s when the Royal Institute of Technology (KTH) was organising trial broadcasts from its clock tower, programmes were produced with HFI employees. Among other things, they showed how easy baking a sponge cake could be. Viewers learnt that there really was no need to whisk the batter for ten minutes as the cookbooks stated. Whisking for three minutes was sufficient if you did it efficiently. TV chefs thus go back a long way.

*The book Vettigt Hemarbete
(Sensible Housework) published in 1950.*



HFI IS SHUT DOWN

Finances were an Achilles' heel for HFI. The institute relied on the annual grants from the Government and a number of companies and organisations, but these were reluctant to increase their grants unless they could increase their representation on the institute's board. At the same time, the women's organisations behind HFI were reluctant to give up their influence. In spring 1952 HFI's activities were scrutinised by the Government's Audit Office which found that the organisation was oversized in relation to its meagre funds. This critical observation resulted in the Government forcing HFI to conduct a reorganisation in 1953 whereby the board chairman and half of the board members would be appointed by the Government, and organisations representing trade unions, farmers and industries would have stronger representation. Despite the reorganisation, discussions continued on the future of HFI and two years later a study by the Ministry of Trade and Industry proposed turning HFI into a wholly State-run institute.

On 1 January 1957 *Hemmens forskningsinstitut* was shut down and was recreated as *Statens institut för konsumentfrågor* (National Institute for Consumer Affairs). Many of HFI's former employees went to work for the new institute, but Brita Åkerman and Carin Boalt were not among them. Brita had already essentially left HFI in connection with the 1953 reorganisation and Carin left in 1957. Both were bitter, not only about the fact that the

women's organisations no longer had an influence over the institute, but that the institute had changed direction. HFI's research had been based on a holistic perspective with the aim of making the work of housewives easier through things like better kitchen design and purpose-built tools and equipment. The new institute's mandate was much narrower, focusing on testing products that were already on the market. Now consumers, not housewives, were the main focus.

CARIN'S NEXT CAREER: THE PROFESSOR

The year before HFI was discontinued Carin and her husband Gunnar separated, but she remained with her five children in the house in Stocksund. She continued her research on housing issues at other institutions. In consultation with *Statistiska Centralbyrån*, the Swedish statistics agency, she continued working on an interview study about work in the home which started in 1956 and was published in 1959 with the title, *1000 husmödrar* (1,000 housewives). She realised that she needed to learn more about statistics and

Carin Boalt at the National Institute of Building Research (SIB). Photo from a private collection.



sociology and took some courses while working for the new National Institute of Building Research (*Statens institut för byggnadsforskning, SIB*). Since her ex-husband Gunnar was a professor at the sociology department at Stockholm University, she could not continue on to higher level courses because of a conflict of interest, but instead took exams for three qualifications and also the Licentiate exam at Lund University in 1963. The topic of her thesis was the innovation potential in Swedish households.

For the next few years she worked half-time as an assistant at the Department of Sociology in Stockholm where she was responsible for courses on the family and housing, while also working for SIB. The head of the institute was architect Lennart Holm who had participated as an expert in various HFI studies, and who later became a professor and Director General for *Planverket*, the National Planning Agency. Many of the study and research projects she worked on had to do with evaluating newly-constructed apartment buildings, focusing mainly on their interiors and how the occupants used their homes and what they thought about them.

At the beginning of the 1960s it was announced that the new Faculty of Engineering at Lund University was seeking to fill a professorial chair in Building Function Analysis. Carin applied for the position but doubted that she would be considered for it. After a long appointment process, Carin was given the chair and started on 1 July 1964. She moved to Lund where she lived and worked until she retired in 1977. Building Function Analysis was an entirely new discipline, which meant that Carin had to develop a curriculum from scratch and plan the programme structure. The new discipline dealt with how the physi-

cal environment and the design of buildings and spaces affected people's lives. The department was provided with a full-scale laboratory which was used for both research and instruction. Architects and sociologists were employed at the department which worked closely with the Department of Sociology. Many of the theses submitted during the first few years were about planning the physical environment, how to utilise the emerging computer technology in building plans, and methods to study the relationship between people and the built environment.



Carin Boalt became the first female professor at a university engineering faculty in Sweden. Here she is pictured at her ceremonial installation as professor in Lund, 1965. Photo from a private collection.

The department initiated exchanges early on with foreign schools and departments of architecture, especially in Africa. In 1968–69, Carin and a group of architecture students visited Ethiopia, Tanzania and Zambia. Working together with local students, they studied how homes should be designed and equipped to suit the living habits and desires of their occupants. In spring 1973 Carin took a sabbatical for a term in Tanzania. She had been asked to contribute her sociological perspective to rural housing development. Here, Carin employed many of the empirical study methods she had developed at HFI. Carin and a number of students visited homes in rural areas. They followed women as they performed their housework and interviewed them on how they used their homes. The same thorough study methods, including visiting homes, taking photos, drawing plans of how houses were furnished and in-depth interviews with members of the households, were repeated at the Swedish home habits studies conducted by SIB in the 1970s and '80s, according to one of the researchers who also participated as a young architecture student in Carin Boalt's project in Tanzania.

After she retired in 1977, Carin moved back to Stockholm where most of her family and friends lived. During her active career as a teacher and researcher she had become irritated about the fact that research results and the knowledge gained was put to very little practical use. After she moved back to Stockholm, Carin started a working group to address issues of knowledge transfer. The group included representatives from universities, government authorities and organisations in other Nordic countries. They decided to create a forum for knowledge and research information called *Forum för Kunskapsvård och*



Carin, 80 years old. Photo from a private collection.

Forskningsinformation (FKF) with Carin as chairman. FKF published a periodical newsletter and arranged seminars on knowledge information, methods for knowledge transfer and the role of the media in the process.

Another cause that Carin took up was the issue of disability. She worked with various organisations for people with disabilities and was instrumental in creating a work group on women and disabilities that addressed issues such as violence towards disabled women and the situation for disabled immigrant women. Another topic that Carin continued to focus on after her retirement was housing for the elderly. Although in the 1970s this was not a prioritised research area, interest in it was gradually growing. Carin and a colleague helped to conduct a review of research on the elderly. At the beginning of the 1990s there was a drive to shine a spotlight on elderly issues under the heading “Ageing is Growing” (*Att åldras är att växa*), led by Bror Rexed who was the former Director General of *Socialstyrelsen* (the National Board of Health and Welfare). Carin was a member of the scientific advisory board and participated in various work groups and seminars. She also wrote and helped produce a short film.

In 1979 Carin was diagnosed with breast cancer. After completing her treatment she became involved in a breast cancer society. In the mid-1980s the cancer returned and she went through another round of treatment. In the 1990s she became progressively more disabled. She spent the last few years of her life in a wheelchair and needed a lot of help, but she retained her interest in the world around her, watching TV, reading and dictating her memoirs. She died on 28 April 1999.

BRITA'S NEXT CAREER: THE INVESTIGATOR



Unlike for Carin, who held a full-time, senior position at HFI until it was shut down, HFI was not a full-time commitment for Brita. During the period 1944–53 she was chairman of HFI's working committee at the same time as she was director of social affairs at *Svenska slöjdföreningen* (the Swedish Society of Industrial Design) as well as a member of a couple of government committees. In 1952 Brita had completed a study on a merger between HFI and the Active Economizing programme and had initiated a discussion with the Government about a future organisation. But before this took place, the Government's Audit Office was asked to scrutinise HFI's activities and finances. The auditors criticised the institute's finances. However, after an internal audit it was determined that the financial situation was not as bad as first thought. Despite these findings, Brita still resigned from her position on the board and working committee. She had recently left her position at *Svenska slöjdföreningen* because she assumed she would be busy working on numerous assignments for HFI: "I felt a great emptiness," Brita wrote many years later in her memoirs. She felt that she had

been pushed out of HFI, and her important work, which had given her so much joy and strength, had been taken from that her. She was also disappointed that the core of the institute's programme was gone.

I never again felt so committed to any work. When I think back to what Elin Wägner said in 1945 at the celebration of women at her induction into the Swedish Academy: "It may seem insignificant, but we can start by rejecting a washing-up brush and end up freeing ourselves from an entire civilisation," I cried over not being able to continue working on that washing-up brush.

But Brita did not need to worry about being unemployed. When Ulla Lindström was appointed as a cabinet member in 1954 and wanted to take stock and review policy relating to families, she appointed Brita to work on the commission. The inquiry was completed in just one year and resulted in a report entitled *Society and Families with Children*. It attracted a lot of media attention because it was able to prove that families with children lived in a significantly worse financial situation than other households and also in more cramped living conditions. At the end of the 1950s she also became increasingly interested in consumer affairs and was vice chairman of *Statens konsumentråd*, the Government's consumer agency.

In 1960 Brita returned to her former workplace, *Svenska slöjdföreningen*, where she now served as Assistant Director. For six years she worked on examining and studying articles for everyday use and consumer information. In 1968 she summarised her views on con-

sumer policy in a polemical book entitled *Makt åt konsumenten* (Power to the Consumers) in which she criticised the vulnerable position consumers found themselves in and developed a concrete programme to strengthen consumer influence. The book was much discussed and resulted in numerous invitations for Brita, mainly from local consumer associations and social democratic women's clubs to lecture, moderate discussions and participate in debates.

When she left Svenska slöjdföreningen in 1966 Brita was asked to work on a study for the Stockholm municipal executive board's committee for women's affairs. In the years that followed she worked on studies that resulted in the papers entitled *Program för jämlikhet mellan kvinnor och män* (Programme for Equality between Women and Men) (1970) and *Kvinnor i kommunens tjänst* (Women in the Service of the Municipality) (1972). The last study

Brita Åkerman at Svenska slöjdföreningen (the Swedish Society of Industrial Design). Photo from a private collection.





Brita reading at the age of 88. Photo from a private collection.

she conducted on behalf of the committee was a proposal for a trial to improve services in residential areas, published in the report *Service och gemenskap där vi bor i Stockholm* (Service and community where we live in Stockholm) (1973).

After she retired Brita had an opportunity to work with her sister once again. In 1980 she initiated a research project where she worked with Carin and a group of younger researchers and journalists to document the history of housework, women's associations and actions and research on housework, homes and home design in the 1900s. The project resulted in three anthologies: *Den okända vardagen, om arbetet i hemmen* (Unknown everyday life – on work in the home) 1983, *Vi kan Vi behövs! Kvinnorna går samman i egna föreningar* (We can, we are needed – women join forces to form associations) 1983, and *Kunskap för vår vardag, utbildning och forskning för hemmen* (Knowledge for everyday life and research for the home) 1984.

In 1979 Brita received an honorary PhD in Engineering from Chalmers University of Technology, motivated as follows: “Her achievements are those of a pioneer and she has with clarity and wisdom acted as a reliable guide in the efforts to develop good homes and items for everyday use.” In addition, in 1996 when she was 90 years old, Brita was also given an honorary PhD by Umeå University. Up to her death in 2006, she read journals and books (without reading glasses!), much of it lyrical poetry. One of her favourites was Alf Henriksson and on her bedside table she kept a piece of paper with his poem called “When we get old.” But most of all she loved to see her grandchildren, find out what they were doing and listen to their ideas and future plans.

TO LEARN AS YOU LIVE AND PRACTICE WHAT YOU PREACH

“Research for Change” was the motto for Brita Åkerman’s and Carin Boalt’s professional careers. They wanted the results of their studies and research to come to concrete and practical use. Brita and Carin lived in a transitional era when housing policy and socio-political issues were high on the agenda. The sisters, like many of their colleagues of the same generation, came into contact with new disciplines such as sociology, pedagogy and psychology. They became investigators, experts, opinion makers, and played a part in reforming Sweden from the 1930s and onwards. The new Social Democratic Government started to realise the importance of having women as experts and advisors in efforts to improve living conditions.

Research on the home and housework was a new field that was wide open and in which many women were now able to find work. Both Brita and Carin took the opportunity to get involved and change society. Their focus was making housework less taxing by ensuring that manufacturers produced good household appliances and tools, but also improving housing standards and living conditions for families. They had slightly different roles in these reforming efforts: “I was working concretely with washing-up brushes and Brita was working at higher levels to change Swedish society,” Carin said many years later, alluding to Elin Wägner’s words (see p. 50).

A highly motivating factor for Brita and Carin was the desire to improve the lives of women. They both worked full-time, had five children and held the main responsibility for their homes and children. Their studies and research on families who were growing out of their homes, on how to make ends meet and have more time to spend with the children, was very much based on their own experiences. They learned as they lived, while also practicing what they preached, and they put their own children first. A letter that a housemaid of the Boalt family wrote to her parents clearly bears witness to this:

I am often surprised at how Mrs. Boalt reacts. She doesn't mind if people come to visit and trip over half a dozen children's shoes in the hallway. On the floor and on the stairs there are hats, mittens and spades. She never says anything about it. She doesn't get involved in household matters, but is always there for her children. But she is not strict enough and the children are therefore headstrong...

Researchers like the Swedish historian Yvonne Hirdman would later criticise the women reformers of being social engineers who knew best and wanted to put people's lives in order. Perhaps HFI's researchers conscientious efforts to provide information and advice to housewives about food, cooking, laundry, sewing, child-rearing, furnishing and how to economize, may in retrospect seem a little overbearing. But it is important to note that were they careful to first familiarise themselves with people's realities; how families used their homes, and to frequently ask women how they would like things to be.

Their efforts helped to make kitchens better places to work and to ensure they were

better equipped. Tools and appliances were thoroughly tested before they were put on the market, which benefitted not only households, but Swedish companies such as Electrolux and KF as well. The actual result of the changes to homes and housework was a significant improvement in standards and a dramatic decrease in cramped living conditions. The improved kitchen design has stood the test of time – from the construction of the first “*folkhem*” homes in the 1940s and ’50s and the “Million Programme” mass production of homes in the ’60s and ’70s, to today’s IKEA kitchens that are found in millions of homes the world over with their hard-wearing cupboards and work surfaces built at just the right height for comfort and convenience.



The HFI research has indeed helped improve the Swedish kitchen. Photo Nordiska Museet.

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