

# **Requalifying the Built Environment: Challenges and Responses**

## **Advances in People-Environment Studies**

**David Uzzell**; PhD, FBPsS, FRSA, Prof., University of Surrey, UK, Past-President of the International Association for People-Environment Studies (IAPS).  
(Series Editor)

The new book series *Advances in People-Environment Studies*, published in collaboration with the International Association for People-Environment Studies (IAPS; [www.iaps-association.org](http://www.iaps-association.org)), is a timely initiative to provide researchers with up-to-date reviews and commentaries on the diverse areas of people-environment studies that are of current concern. The series focuses on significant and currently debated themes. The books are interdisciplinary, drawing on expert authors from the social, environmental, and design disciplines, especially those who are working at the interface between the design (e.g., architects, landscape planners, urban designers, urban planners) and the social sciences (e.g., environmental psychologists, sociologists, geographers). Each volume reports on the latest research and applications of research in the field. The series is meant to provide a bridge, not only between disciplines but also between cultures. The authors and contributors come from many different countries and are undertaking research and practicing in culturally diverse environments. Books in the series are therefore a precious source for those who want to know what is going on in a specific field elsewhere and to find ideas and inspiration for their own work.

**Advances in People-Environment Studies Vol. 4**

**Requalifying the Built Environment:  
Challenges and Responses**

Roderick J. Lawrence  
Hulya Turgut  
Peter Kellett  
(Editors)

**HOGREFE**



## Library of Congress Cataloging in Publication

is available via the Library of Congress Marc Database under the  
Library of Congress Control Number: 2012934095

## Library and Archives Canada Cataloging in Publication

Requalifying the built environment : challenges and responses / Roderick J. Lawrence, Hulya Turgut,  
Peter Kellett, editors.

(Advances in people-environment studies ; v. 4)

Includes bibliographical references and index.

ISBN 978-0-88937-430-0

1. Urban renewal. 2. City planning. 3. Sociology, Urban.

I. Lawrence, Roderick J II. Turgut, Hulya III. Kellett, Peter IV. Series: Advances in people-environment  
studies ; v. 4

HT170.R46 2012      307.3'416      C2012-902016-8

Cover illustration: Wilfrid Moser (1914–1997). Brides for Seven. 1964, oil and collage on canvas,  
114 × 146 cm. Kunsthaus Zug, donated by the Sophie and Karl Binding Foundation, Switzerland. © Wilfrid  
Moser Foundation

© 2012 by Hogrefe Publishing

### PUBLISHING OFFICES

USA: Hogrefe Publishing, 875 Massachusetts Avenue, 7th Floor, Cambridge, MA 02139  
Phone (866) 823-4726, Fax (617) 354-6875; E-mail [customerservice@hogrefe-publishing.com](mailto:customerservice@hogrefe-publishing.com)

EUROPE: Hogrefe Publishing, Rohrschweg 25, 37085 Göttingen, Germany  
Phone +49 551 49609-0, Fax +49 551 49609-88, E-mail [publishing@hogrefe.com](mailto:publishing@hogrefe.com)

### SALES & DISTRIBUTION

USA: Hogrefe Publishing, Customer Services Department,  
30 Amberwood Parkway, Ashland, OH 44805  
Phone (800) 228-3749, Fax (419) 281-6883, E-mail [customerservice@hogrefe.com](mailto:customerservice@hogrefe.com)

EUROPE: Hogrefe Publishing, Merkelstr. 3, 37085 Göttingen, Germany  
Phone +49 551 9995-0, Fax +49 551 99950-425, E-mail [publishing@hogrefe.com](mailto:publishing@hogrefe.com)

### OTHER OFFICES

CANADA: Hogrefe Publishing, 660 Eglinton Ave. East, Suite 119-514, Toronto, Ontario M4G 2K2

SWITZERLAND: Hogrefe Publishing, Länggass-Strasse 76, CH-3000 Bern 9

Hogrefe Publishing

Incorporated and registered in the Commonwealth of Massachusetts, USA

Hogrefe Publishing

Incorporated and registered in Göttingen, Lower Saxony, Germany

No part of this book may be reproduced, stored in a retrieval system or transmitted, in any form or by any  
means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written  
permission from the publisher.



Printed and bound in Germany

ISBN: 978-0-88937-430-0

# Table of Contents

<b>Foreword</b> .....	vii
<b>Introduction</b> .....	1
<b>Urban Requalification, Renewal, and Regeneration</b> Roderick J. Lawrence, Hulya Turgut, and Peter Kellett.....	3
<b>I Heritage and Cultural Identity: Key Issues</b> .....	11
<b>The Heritage of the Built Environment as Development:     Paradigms, Possibilities and Problems</b> Gregory Ashworth .....	13
<b>Historic City Centres as Catalysts for Wider Sustainable Urban Regeneration</b> Amira M. Elnokaly and Ahmed B. Elseragy.....	29
<b>Case Studies in Renovation and Urban Regeneration: Learning by Doing</b> Rolf Johansson.....	51
<b>II Challenges of the Institutional, Economic, and Political Context</b> .....	67
<b>Ideologies of Gentrification and the Right to the City</b> Loretta Lees .....	69
<b>Social and Spatial Re-Structuring in Inner-City Residential Areas:     The Case of Fener-Balat, Istanbul</b> Hulya Turgut and Begum Sismanyazici.....	93
<b>Who Won the Battle of Beirut Downtown? Revisiting the Crisis of Cultural Identity     in Rehabilitating Post-War Beirut</b> Tarek Saad Ragab .....	115
<b>III Implementation Addressing Key Challenges</b> .....	133
<b>Requalifying Aging Suburbs to Counter Urban Sprawl: The Contribution     of GIRBa to Cultural Sustainability</b> Carole Després, Andrée Fortin, and Geneviève Vachon .....	135
<b>Resident Led Regeneration: Proposals for Large Scale Self-Build     Development in London</b> Levent Kerimol .....	161

<b>Social Urbanism: Integrated and Participatory Urban Upgrading in Medellin, Colombia</b>	
Camilo Calderon .....	179
<b>Empowering Local Communities to Revitalise Old Quarters: Cases From Egypt</b>	
Maye Yehia .....	199
<b>Epilogue</b> .....	221
<b>Requalifying the Built Environment: Moving Forward</b>	
Roderick J. Lawrence .....	223
<b>Authors</b> .....	227
<b>Index</b> .....	229

# Case Studies in Renovation and Urban Regeneration

## Learning by Doing

Rolf Johansson

Department of Urban and Rural Development, Swedish Agricultural University, Uppsala, Sweden

---

### Abstract

This chapter addresses the role of case-based reasoning in the field of architecture and planning. Professionals in the “making professions” who need to handle complex problems which have many possible solutions – so called wicked problems – makes use of a repertoire. Access to a repertoire enables them to act. One of the most important components of a professional’s repertoire is socialized cases. What architects and planners know is embedded in what they do. The author argues that more attention should be paid to learning by doing, in a broader sense, through systematic development of a repertoire that is socialized within the profession and that constitutes a common ground. Evaluative case studies make important contributions to a shared repertoire. This chapter elaborates on the characteristics of case study methodology and how it can be adapted to the study of artefacts. The case of Hammarby Sjöstad is used as an example.

**Key words:** case-based reasoning, case study, evaluation, methodology

---

### Introduction

This chapter addresses the role of case-based reasoning in the field of architecture and planning. Case study methodology has been developed in the social sciences, but it also plays an important role when architects and planners learn from what they have done. Professionals in the “making professions” who need to handle problems which are complex and have many possible solutions – so called wicked problems – make use of a repertoire (Brown, Harris, & Russel, 2010; Rittel & Webber, 1973). Access to a repertoire enables them to act. A most important component of a professional’s repertoire is socialized cases.

What architects and planners *know* is embedded in what they *do*. The author argues that more attention should be made to learning by doing, in a broader sense, through systematic development of the components of professional's repertoires, which are socialized within the profession and constitute a common ground. Evaluative case studies make important contributions to a collectively shared repertoire. Findings from case studies can also be generalized to planning models on a more abstract and general level.

The purpose of this chapter is to capture the essence of case study methodology: Firstly, by discussing the notions of "case study" and "case;" secondly, by tracing its history; thirdly by discussing how case studies can be important to knowledge development in the practice of architecture and planning, and finally, the case of Hammarby Sjöstad is used as an example of how lessons are learnt from a case. Hammarby Sjöstad is a brown-field development of an old harbour and industrial area in Stockholm. Most of the area has been planned for residential, but some of the old industrial buildings have been preserved and converted into offices, conference centre, and dwellings. Hammarby Sjöstad serves as an exemplary example of sustainable development, but there are also lessons learnt from what could have been done better.

## The Notions of "Case Study" and "Case"

A case study is expected to capture a real phenomenon in its naturalistic setting and in its full complexity (Yin, 1984/2009). The case study methodology, which enables this, has developed within the social sciences. A first generation of case studies arose around 1900, first within the discipline of anthropology and on the basis of qualitative methodology (Platt, 1992; van Maanen, 1988). Later, after World War II, a second generation of case studies developed using multi-method approaches, combining quantitative and qualitative methods (Johansson, 2007). Such methodology is applicable not only in the social sciences, but also in practice-oriented fields such as architecture and planning (Groat & Wang, 2002). During the last 30 years, case studies have become even more common in research in the field of architecture and planning, both in the form of evaluative case studies on behalf of the stakeholders in the industry and officials in the public sector, and as a method in academic research (Johansson, 2007).

There are different ideas about what a case study is. A common denominator that case study researchers (Gillham, 2001; Merriam, 1988; Miles & Huberman, 1994; Stake, 1995, 1998; Yin, 1984/2009) might agree on, would be something along the following lines: (1) A case study should have a "case," which is the object of study. (2) The case should be a complex functioning unit that is a phenomenon specific to time and space. In architectural research it may be, for example a residential area, a neighbourhood, a building, a public place, a planning process, or a design process. (3) The case should be investigated in its natural context with a multitude of methods. Case studies in architectural research often combine at least document analysis, observation, and interviews in the phase of data collection. (4) The case should be contemporary, giving the study a focus on on-going events. (5) A case study is expected to capture the complexity of a single case. It focuses



on one case, but simultaneously takes the societal context into account and so encompasses many variables and qualities (Johansson, 2007).

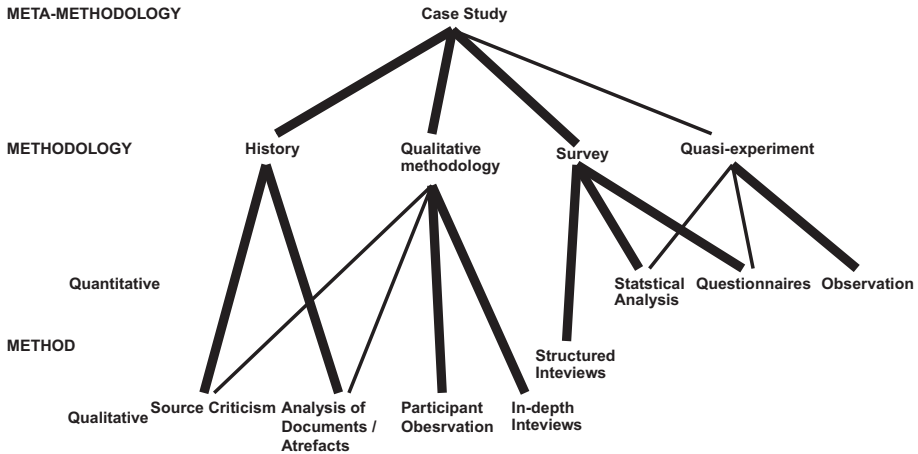
Nevertheless, the case study researchers mentioned above emphasize different features. Robert Stake (1998) points out that crucial to case study research are not the methods of investigation, but instead that the object of study is a case: “As a form of research, case study is defined by interest in individual cases, not by the methods of inquiry used” (p. 86). Other researchers, such as Robert Yin (1984/2009), place more emphasis on the methodology that constitutes a case study. Case study research can be based on different philosophies of science. Stake declares a social constructivist philosophical approach, while Yin declares a positivistic approach.

But, what are the characteristic features of case study methodology? The three most important are: (1) the case study as a combined research strategy, (2) triangulation as an overarching quality criterion, and (3) the purposeful sampling procedure.

A case study applies a combined strategy. This is one of the characteristics of case study methodology. If we make a distinction between methods, which are techniques to collect and analyse data, and methodologies, which are sets of methods recommended in combination with favoured quality criteria, then case study methodology will be different from most other research methodologies. Case study methodology recommends a combination of other methodologies, including the methods for data collection and analysis, and quality criteria they bring into the study. Quantitative and qualitative methodologies can perfectly well be combined in a case study. Post-occupancy evaluations of a residential area in the form of a case study, often combine qualitative document analysis, observations and interviews, with quantitative questionnaires and analysis of archival records. It is recommended even. In this sense, the case study methodology is regarded as a meta-methodology (Johansson, 2007) or a combined methodology (Groat & Wang, 2002; Figure 1).

A major component of case study methodology is the combined research strategy; it combines research methodologies, and it can be regarded as a meta-methodology. This can be understood as a form of triangulation on a meta-level: methodology triangulation. Qualitative methodology can be combined with quantitative survey techniques. As a result, a case study that combines methodologies will also apply several different methods to collect and analyse data. There will be methods triangulation, with the purpose of illuminating a case from different angles. Triangulation provides an important way of ensuring the validity of a case study. Normally, data collection methods are triangulated (many methods are combined), but in addition to this, data sources, theory, or investigators might also be triangulated (Denzin, 1978). One challenge in case study methodology can be to cope with different quality criteria within the same study, for instance when survey research with questionnaires, is combined with qualitative research using in-depth interview technique.

The relation between case study and history requires special attention. Case study methodology is developed within the social sciences, and therefore most case study researchers advocate a social science perspective with contemporary phenomena in focus—phenomena such as people’s or individual’s behaviour or experience. This focus on contemporary events is characteristic of the social sciences. Within research in the field of architecture and planning, an artefact often serves as a focus of attention. When a physical



**Figure 1.** Case study methodology is a meta-methodology. The methodological recommendation is to combine different methodologies within a case study. Different methodologies are associated with different methods of data collection. The figure illustrates relations between different methodological levels in research in the field of architecture and planning. Important relations are illustrated with thick lines, less important ones with thin lines.

artefact is the case – a building, a housing area, or public space for instance, instead of an individual or a social group – the gap between the case study and history tends to diminish. An artefact is always a carrier of its history. The history of an artefact is embedded in it. This is what the philosopher and archaeologist Robin George Collingwood calls his “first principle of a philosophy of history: That the past which an historian studies is not a dead past, but a past which in some sense is still living in the present” (1939/1978, p. 97). The context of design and the context of use may be separated in time, but are often equally important to the understanding of the case of an artefact. Therefore history, with its specific methodology, is often included in case studies in the field of architecture and planning (Johansson, 2007).

The selection method, or the sampling procedure, is specific for case study methodology: A case is selected for a study because it analytically is considered to be information-rich in relation to the issues at stake, or the research questions. As Stake (1995) stresses, the selected case is often very a-typical, instead of typical, when it is purposefully or analytically selected. A case may be purposefully selected in virtue of being information-rich, for example because it is critical, revelatory, unique, or extreme (Patton, 1990; Stake, 1995; Yin, 1984/2009). This is different from a representational sampling procedure, where units of analysis are selected to be representative of a whole population. If a case is purposefully selected among other possible cases, then there is an interest in generalizing the findings. Generalizations are analytically made to theory, or to categories of cases, and not to whole populations. This is a completely different selection and generalization

logic than that applied when samples are representative and statistical generalizations are made to an entire population, as in research that is meant to identify correlations. There is a likeness between a case study and experimental design: They are both restricted to a sample of one. From cause and effect relations validated in an experiment, conclusions are drawn to theory in the form of universal laws. A difference is that experimental evidence is manufactured by the experiment, but collected from real life situations in a case study. The conclusions from a case study are most often to “petite” theories with a limited domain of validity (Johansson, 2004). A case can have a more general impact by being paradigmatic. Paradigmatic cases are “cases that highlight more general characteristics of societies in question” (Flyvbjerg, 2006, p. 232). Such cases contribute to conceptualize society on a more general level.

The case might alternatively be selected because the investigator has an intrinsic interest in the case as such, and has no interest in generalizing her or his findings. The researcher focuses on understanding the specific case and learning from it. If the findings are generalized, it is not done by the researcher, but by the receiving context through what Robert Stake (1995) calls “naturalistic generalisation.” Although the researcher does not generalize the results, others can benefit from them, and generalize by comparing them with findings from other case studies. The results from a case study can also enrich the repertoire that practitioners build up to act as experts. This is one reason why case studies are important to architectural research.

The concept of *case* is not well defined and remains a subject of debate. The case may be a relatively bounded object or a process; it may be theoretical, empirical, or both (Ragin & Becker, 1992). At a minimum, a case is a phenomenon *specific to time and space*. In addition to both the temporal and spatial dimensions of a case, it is often also socially defined, which mean that it is a phenomenon specific to individuals or groups of individuals.

The notion of “case” is complicated in another respect. The kind of case on which a case study focuses may change over time. It may change both in the hands of the researcher and in the hands of the researcher’s audiences. It is characteristic of case study methodology that the boundaries, and often even the focus of the case, change through the research process. The classic study *Street Corner Society* by William Foot Whyte (1943/1993), for instance, started out as a multiple-case study of boys’ gangs. The focus of the study was two gangs and the immediate local context in which they were active. However, the study focus was progressively enlarged to also include the community and its social structure. In the second edition of the book, a methodological appendix was added, and as a result the study is now often read as a case of participant observation; the focus of the study had changed in the receiving context (Platt, 1992).

## The Development of Case Study Methodology

A first generation of case studies appeared around 1900, initially within the discipline of cultural and social anthropology. From early accounts of journeys, systematic investigations of other cultures in the form of field studies emerged, with participant observation

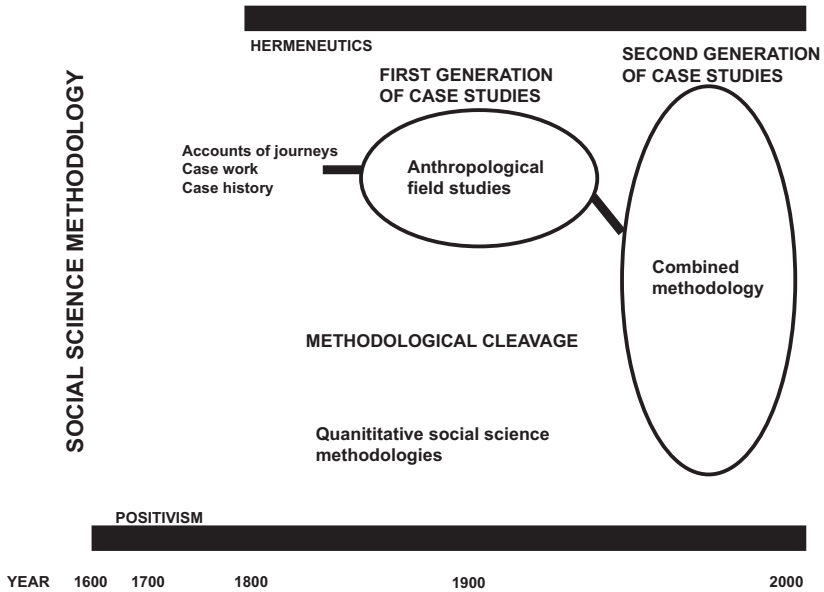
as the predominant method of data collection. Another source of case study methodology has been provided by descriptions of individuals within medicine, social work, and psychology, often called “case work” or “case history.” A well-known early community case study is *Middletown* by Robert and Helen Lynd, who did their fieldwork in 1924–1925 (Yin, 1984/2009). The first generation of case studies culminated in the Chicago school of sociology, in which the anthropologist’s field study method was practised on contemporary society in the university surroundings (Platt, 1992; van Maanen, 1988).

After the Second World War logical positivism dominated the philosophy of science, and also influenced the social sciences. The social sciences came to favour positivism and quantitative methods. Surveys, statistical methods, opinion polls, experiments, and quasi-experiments were considered scientific, and qualitative case studies were criticised for being non-scientific, without methods revealed, limited capacity for generalizations, and overlong narratives. During this period differing methodologies led to a distinction within the social sciences between two cultures: positivistic and anti-positivistic. Thus the social sciences were characterised by a methodological division. This reflected the birth and development of the social sciences within the context of existing tensions between the natural sciences and the humanities.

Around 1950 logical positivism dissolved, but within the social sciences the methodology of the natural sciences was still emulated. During its emergence, housing research, which was based on the model of the social sciences, was very much dependent on positivistic approaches and favoured quantitative methodologies. This was a consequence of a fear of not being scientifically acceptable. Philosophers of science, such as Peter Winch (1958/1994) and Georg Henrik von Wright (1971), criticised the methodological influence of the natural sciences on social science research. In the late 1960s a second generation of case study methodology began to emerge – one, which bridged the gap between positivism and hermeneutics as a philosophical foundation of the social sciences.

## Grounded Theory

The first type of methodology within the second generation, which can be applied in a case study, was grounded theory. Despite its name, it is a methodology. The methodological principle is that theory must be generated from empirical data. The generation of theory is given priority to theory testing. Moreover, theories are not of universal validity, but may just claim to be valid within a limited domain. Grounded theory methodology combines qualitative field study methods from the Chicago School of Sociology with quantitative methods of data analysis (Glaser & Strauss, 1967). The result is an inductive methodology that is based on using detailed procedures to analyse data and build theory. Robert Yin (1984/2009) took the next step. He transferred experimental logic into the field of naturalistic inquiry and combined it with qualitative methods. In his book he makes many references to experimental and quasi-experimental designs, and the foreword is by Donald Campbell who has contributed extensively to quasi-experimental methodology. Since then, much has been written on case study methodology which has developed in the



**Figure 2.** The development of case study methodology over time. The first generation of case studies was an isolated island within the landscape of methodologies in the social sciences. After the Second World War it received heavy criticism from the logical positivists. In recent decades, case study methodology has made a comeback. Its methods have become explicit and inclusive.

direction of eclecticism and pragmatism. This development has been advocated by, among others, Michael Quinn Patton (1990, p. 39): “Rather than believing that one must choose to align with one paradigm or the other, I advocate a paradigm of choices. A paradigm of choices rejects methodological orthodoxy in favour of methodological appropriateness as the primary criterion for judging methodological quality.” In his book, *The Art of Case Study Research*, Robert Stake (1995) presents a methodology that is firmly rooted in an interpretive qualitative tradition. Case study methodology now bridges the methodological gap in the social sciences. Quantitative and qualitative methodologies can perfectly well be combined (Figure 2).

## The Role and Content of a Repertoire

In practice-oriented fields of research, such as architecture and planning, the case study has a special importance. The ability to act within professional practice is based on knowledge of a repertoire of cases or examples, together with design principles. These components in a

repertoire are based either on personal experience or are model cases established within the profession. Case studies contribute to the building of a professional's repertoire. A designer's work is based on comparisons between known cases, examples and principles from the repertoire and the actual design problem. Practitioners are capable to act because they have access to a repertoire (Lawson, 2006; Lawson & Dorst, 2009; Schön, 1991).

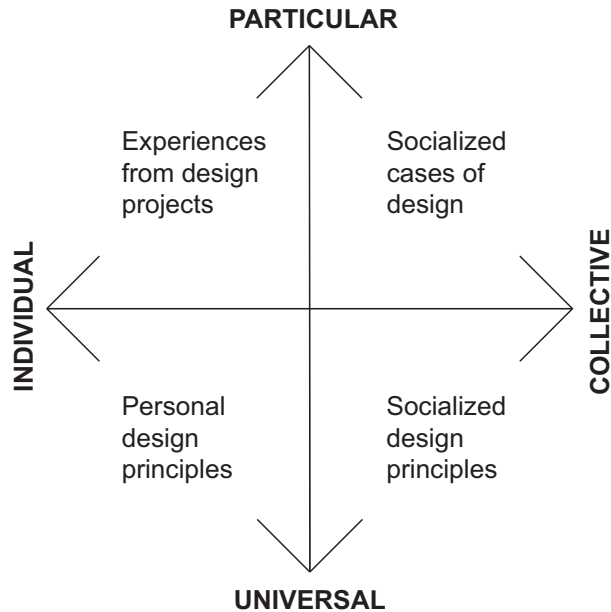
The problems an environmental designer needs to handle are uniquely grounded in their specific settings. They have numerous good solutions to problems which are constantly redefined during the process of solving them. They are so called "wicked" problems (Brown, Harris, & Russel, 2010; Rittel & Webber, 1973). Such complex problems are challenging because in the end, all possible solutions must be reduced to only one. To be able to perform well, the designer has to be on an advanced level in the Dreyfus model of the human learning process. Those who have attained the highest level of skills are "experts" (Dreyfus & Dreyfus, 1988).

According to Donald Schön, a practitioner is capable to act as an expert in a complex problem situation because she/he has "built up a repertoire of examples, images, understandings and actions. (...) When a practitioner makes sense of a situation he perceives to be unique, he *sees* it *as* something already present in his repertoire. (...) [I]t is... to see the unfamiliar, unique situation as both similar to and different from the familiar one, without at first being able to say similar or different with respect to what" (Schön, 1991, p. 138). To build a repertoire is important for building and maintaining expert knowledge.

An architect's repertoire is built from different components. On the one hand there are unique examples, particulars, and on the other hand there are universal design principles. Particulars can be one's own design projects or designs by others, which are familiar and well known in their details. In between the unique examples and the universal principles, there are notions of types. Types in architecture can be classifications by, for instance, functional types, morphological types, or historical types. Universal design principles, or "primary generators" are guiding ideas about how to organize space and volume. A repertoire contains both particulars in the form of cases and universals in the form of design principles, and case studies may contribute to both kinds of components.

The contents of a repertoire can be unique to an individual or socialized within the profession and thus collectively shared. Designers' experiences from making designs, or being in an environment, can be fed into the "individual" sector of the repertoire. Precedence cases of design are disseminated through discourses within the profession, in journals and books, through education, and through internship, and they feed in to the "collective" sector of a repertoire. The repertoire contains both biographical and socialized material (Figure 3).

What architects and planners *know* is embedded in what they *do*. One way to enrich the socialized sector of professional repertoires is through case studies of executed projects and of design processes. Case studies of the built environment can for example focus on people-environment relations, individual or people's experiences, their use and assessments of buildings or outdoor environments (post-occupancy evaluations). Case studies can also focus on the design process or project management as such. If the results are disseminated within the profession, they might add to a shared repertoire.



**Figure 3.** The different components of a professional's repertoire. Case studies contribute mainly to the particular-collective sector of a repertoire.

This conception of the role of repertoire means that a designer does not invent new ideas all the time; rather it is “often a matter of refining a set of ideas rather than inventing entirely new ones” (Michl, 2002). All design is dependent on what has been done before. Jan Michl has pointed out that “the notion of design is still grafted on to the quasi-religious romantic notion of creativity *ex nihilo* rather than a problem-oriented concept of creativity reflecting the fact that the designer is building on, contributing to, and dependent on the creative contributions of earlier designers.” Architectural criticism, case studies and particularly evaluative case studies, such as post-occupancy evaluations, help to build up the repertoire that is shared within a profession. For that reason, these kinds of works are important for the development of the various architectural and planning disciplines.

## The Case of Hammarby Sjöstad

The Hammarby Sjöstad project is a Brownfield development of a run-down port and industrial district in Stockholm occupying 200 hectares of land, which has been converted into a housing area with 20,000 people living and 10,000 working there in 2010. It is one of the largest housing developments in Europe. Hammarby Sjöstad has

an inner-city character with neo-modern architecture in a waterside location, and the proximity of both the inner city and the Nacka Nature Reserve. The Luma Bulb Factory complex contains the only buildings of cultural value in the development area. Architects Arthur von Schmalensee and Eskil Sundahl designed the complex in the late 1920s, and its architecture represents early architectural modernism at its best. The factory is now transformed into a conference centre, offices and dwellings (Johansson & Svane, 2002, Vestbro, 2005). A big part of the area was originally occupied by small enterprises in temporary shacks of corrugated steel. When they were demolished the soil in the area was highly contaminated. Soil decontamination was a challenging and expensive task. On Sickla Udde, the first phase of the development, 130 tonnes of oils and grease, and 180 tonnes of heavy metals were excavated (Stockholm City, 2007; Figure 4).

The Hammarby Sjöstad project is unique in its size and municipal organization as well as in its ambitious environmental objectives. The City's politicians decided on the environmental objectives by agreeing across political block boundaries in 1996, and as a result well-defined environmental goals were drafted by the City of Stockholm (Stockholm City, in press). A driving force was that in 1996 Stockholm City had the ambition to arrange the Olympics 8 years later. This came to nothing, but the high environmental ambitions were kept almost intact. The basic idea was that this housing area should be "twice as good" as



**Figure 4.** A model of the whole area in its fully developed stage as shown at the information centre in Hammarby Sjöstad. The last phase of the development area is still under construction. The Luma Bulb Factory is seen in the middle of the picture. (Photograph: the author)



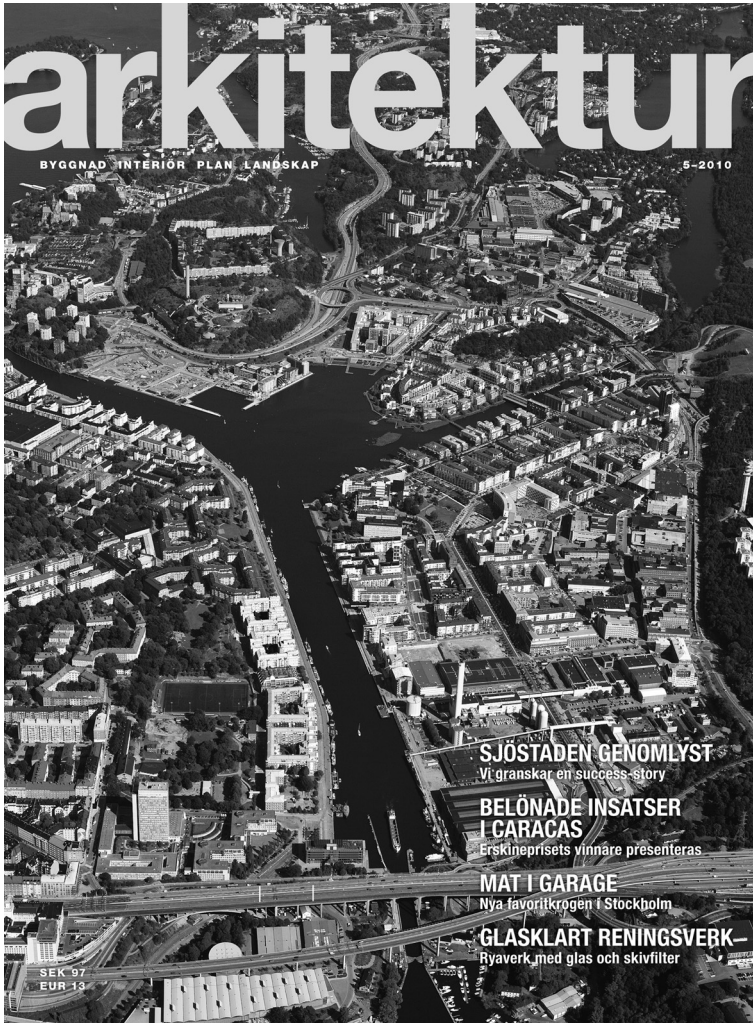
other contemporary housing, meaning that the environmental impact caused by emissions from Hammarby Sjöstad should be 50% lower than the corresponding level for housing areas from the early 1990s. Some examples of operational orientation are:

- The total requirement of energy input should not exceed 60 kWh/m<sup>2</sup>, with electricity up to 20 kWh/m<sup>2</sup>.
- 80% of the recoverable energy content of waste and wastewater will be utilized, with priority for reuse, recycling and real estate related energy recovery.
- 80% of work trips made by public transport, walking or cycling.
- 100% of the heavy shipments are with the vehicles meeting the 2005 current environmental zone requirements.
- The amount of material to landfill (residual fraction) will decrease by 60%.
- 60% of the nitrogen and phosphorus in the organic fraction to be returned to agriculture.
- 95% of the phosphorus in the gray water, urine and faeces should be returned to agriculture (Pandis & Brandt, 2009; Stockholm City, in press).

Hammarby Sjöstad is often selected and presented as an example of best practice in sustainable cities. Many professionals have visited the area and the municipality has built an information centre “GlashusEtt” to provide information both to people living there, the public, and professional specialists. A search on Google scholar for published case studies, reports, articles, etc. about Hammarby Sjöstad, has more than 600 hits as a result. Many journals have had articles about the project. The Swedish professional architectural journal “ARKITEKTUR” has published 19 articles about Hammarby Sjöstad during the last 8 years. Hammarby Sjöstad has been selected as a case in many academic case studies both by senior researchers and students on advanced level (e.g., Bylund, 2006; Engberg & Svane, 2007; Faller et al., 2010; Johansson & Svane, 2002; Pandis & Brandt, 2009; Poldermans, 2005; Svane, 2007; Vestbro, 2005; Figure 5).

The environmental infrastructure in Hammarby Sjöstad is exemplary and one of the best in the world. Public space is designed with a large element of greenery and water; waste management is based on the life-cycle approach to sorting and recycling; public transport is high standard. The project has certainly enriched the repertoires of many architects and planners worldwide, as a result of study visits, case studies and reports, articles in professional journals, and best practice awards. Hammarby Sjöstad can supply concrete examples of designs of plans, buildings and technologies. It can also feed the principles of design with environmental consideration into practitioner’s repertoires.

A case like Hammarby Sjöstad can have the role of a “precedence case,” a case that provides solutions, which are good solutions in their original context. New problem situations can be compared with the case of Hammarby Sjöstad and new solutions developed in analogy to what has been previously achieved. The case of Hammarby Sjöstad can serve as a benchmark for sustainable city planning and housing, and enrich professional repertoires. Hammarby Sjöstad may also qualify as a “paradigmatic case.” Hammarby Sjöstad is a case of how planners plan with high environmental ambitions and governance



**Figure 5.** An aerial view of Hammarby Sjöstad on the cover of the Swedish architectural journal *Arkitektur*. (Source: courtesy of *The Swedish Review of Architecture*, no 5/2010. Theme: Hammarby Sjöstad. Aerial photograph Lennart Johansson/City of Stockholm, reproduced with permission)

with goals as a planning model. It may function as a focus for the founding of a school of thought in planning for sustainable cities; it can be a case that sets the standard for a period of time. It will function as a reference when models of governance through environmental goals in construction projects are developed. In this way a case like Hammarby Sjöstad

has an impact on a more abstract level. It may affect general models for planning and control of urban regeneration projects with a high environmental ambition.

## **Lessons Learnt From the Case of Hammarby Sjöstad**

Hammarby Sjöstad serves in many respects as an exemplary example, however, it is still from errors or conclusions about what could be done even better, from which most lessons can be collected.

As a result of the attempt to steer the project through environmental goals, the Hammarby Sjöstad project is to a large extent an experiment that accommodates both new organizational models and technological solutions. A tool was needed to follow-up on the environmental goals, and such a tool was developed and called the “Environmental Load Profile.” It is a means of calculating the environmental impacts of a housing project, based on estimated or measured data from the buildings in use (Johansson & Svane, 2002). The Environmental Load Profile has indicated that many, but not all, of the quantified operational goals have been fulfilled. The uncertainty that surrounds the compliance rate is because it is not clear from the Environmental Program how the objectives will be monitored (Pandis & Brandt, 2009). Therefore, the operational goals did not have the formative importance of the process as they could have.

The political majority in the City shifted three times between 1990 and 2006, which caused several revisions of the environmental programme. When the right wing coalition took over in 1998, the status of the environmental program was changed from binding to recommended. Different ideologies about urban qualities and attitudes to local services also had an influence on the project (Vestbro, 2005). The environmental program was to weaken during the time of the area’s development. Early in the development process the City introduced a new organizational model by establishing a Project Team with representatives from all different administrations and companies owned by the City. In the early phase of the project the team had its office within the development area. After the shift in political majority in 1998, it was decided that the Project Team should leave the office and become part of the City’s Streets and Real Estate Administration (Johansson & Svane, 2002). This was a change in the direction of a more traditional organizational model.

Evaluations have shown that the buildings are not as successful as expected in energy efficiency and sustainability (Block & Bokalders, 2010). In addition, it was also revealed a serious mistake in the Hammarby Sjöstad project that would change construction practices all over Sweden. Builders changed their practice regarding the protection of building materials and structures under construction from the weather. In the summer 2000, when the City’s project team made an “environmental round,” it was revealed that one of the contractors did not comply with its contract with the developer and the City, nor did they fulfil the undertakings of their own quality control and environmental management systems. Severe levels of mould were found on wooden framework and gypsum boards in nearly

finished dwellings. The City's officials struggled for a long time to force the contractor to cope with the problem. The possibilities for the City to resort to sanctions were very limited. It was not until articles were published in the media that the contractor started earnestly to address the problem. As a consequence the outer and inner walls of more than fifty dwellings were demolished down to the concrete structure and then rebuilt. After this incident environmental inspections were intensified, and they were also more respected by the contractors (Engberg & Svane, 2007; Johansson & Svane, 2002; Svane, 2007). Another technical problem was caused by a new solution of the facades with insulation just under the facade plaster that was used in many of the buildings. This solution proved to be less sustainable and this was another experience of failure in the project.

The environmental program for Hammarby Sjöstad has been crucial for the environmental profile of the project. The holistic view that the program required has necessitated new ways of organizing the planning process, helping to develop new technology choice and resulted in what came to be known as the Hammarby Model (Pandis & Brandt, 2009). The Hammarby model is an integrated environmental solution creating an eco-cycle that handles energy, waste, water and sewage for housing and workplaces in the area (Stockholm City, 2007). Nevertheless, the operational goals in Hammarby Sjöstad were regarded



**Figure 6.** Homes in Hammarby Sjöstad. In the foreground is a channel that is part of the storm water system. The large windows provide an attractive lake view, but are in conflict with the objective to keep energy consumption down. (Photograph: the author, 2008)

as unrealistic and not fully supported by the contractors, and therefore the process of formulating the goals needs to be more explicit and include all stakeholders. A future environmental program should also include means to influence both the behaviour and commitment of the users (Pandis & Brandt, 2009).

In a complex development project like Hammarby Sjöstad, governance by goals and goal achievement is complicated by goal conflicts. Several goal conflicts occurred during the construction phase. The developers argued that the environmental objective for energy consumption of 60 kWh/m<sup>2</sup> per year for heating, hot water and electricity was technically impossible without reduced comfort. It is now a fact that the measured real use of energy is about double that stipulated by the objective. Environmental objectives can easily be in conflict with economy objectives. Environmentally friendly technical solutions are most often more expensive than “normal” ones. This might cause conflicts if the users are not willing to pay the additional costs. Also, when investments costs are higher it is necessary to show that it actually will pay back in the phase of usage. Another conflict was created by the demand for large windows towards the lake view and the objective to keep energy consumption down (Svane, 2007; Figure 6).

A final reflection based on experiences from Hammarby Sjöstad is that the paradigmatic change from governance by rules to governance by goals, which took place some 20 years ago in Sweden, requires resources to ensure that the objectives are actually met and sanctions to coerce to the desired goal when they not are fulfilled. New means of control and incentives are needed in the post-welfare state, and these were not fully developed in the case of Hammarby Sjöstad. Here again Hammarby Sjöstad has served as a paradigmatic case.

## References

- Block, M., & Bokalders, V. (2010). Världsbäst utanför husen [Best in the world outside the houses]. *Arkitektur*, 5, 54–55.
- Brown, V. A., Harris, J. A., & Russel, J. Y. (Eds.). (2010). *Tackling wicked problems. Through the transdisciplinary imagination*. London, UK; Washington, DC: Earthscan.
- Bylund, J. R. (2006). *Planning, projects, practice. A human geography of the Stockholm local investment programme in Hammarby Sjöstad*. Stockholm, Sweden: Stockholm University.
- Collingwood, R. G. (1939/1978). *An autobiography*. Oxford, UK: Clarendon.
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods* (2nd ed.). New York, NY: McGraw-Hill.
- Dreyfus, H., & Dreyfus, S. (1988). *Mind over machine: The power of human intuition and expertise in the era of the computer*. New York: Free Press.
- Engberg, L., & Svane, Ö. (2007, June), *Compromise, failure or necessity – Analysing the brownfield development of Hammarby Sjöstad, Stockholm, as negotiated sustainability processes in governance networks*. Paper presented at the ENHR Conference in Rotterdam, The Netherlands.
- Faller, R., Kallehauge, L. F., Sorensen, U. L., & Siohan, M. (2010). *Eco-Cities: Towards sustainable urban development?* Aalborg, Denmark: Aalborg University, Urban Planning and Management.
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, 12(2), 219–245.

- Gillham, B. (2001). *Case study research methods*. London, UK: Continuum.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine.
- Groat, L., & Wang, D. (2002). *Architectural research methods*. New York: Wiley.
- Johansson, R. (2004). Types of generalisation from a single case. *Journal of Applied Psychology*, 6(3–4), 213–221.
- Johansson, R. (2007). On case study methodology. *Open House International*, 32(3), 48–54.
- Johansson, R., & Svane, Ö. (2002). Environmental management in large-scale building projects – Learning from Hammarby Sjöstad. *Corporate Social Responsibility and Environmental Management*, 9(4), 206–214.
- Lawson, B. (2006). *How designers think. The design process demystified*. Oxford, UK: Architectural Press.
- Lawson, B., & Dorst, K. (2009). *Design expertise*. Oxford, UK: Architectural Press.
- Merriam, S. B. (1988). *Case study research in education*. San Francisco, CA: Jossey-Bass.
- Michl, J. (2002). On seeing design as redesign. An exploration of a neglected problem in design education. *Scandinavian Journal of Design History*, 12(7), 7–23. Retrieved from <http://www.designaddict.com/essais/michl.html>.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. Thousand Oaks, CA: Sage.
- Pandis, S., & Brandt, N. (2009). *Utvärdering av Hammarby Sjöstads miljöprofilering – vilka erfarenheter ska tas med till nya stadsutvecklingsprojekt i Stockholm?* [Evaluation of Hammarby Sjöstad's environmental profile – Which are the experiences to feed into new urban development projects in Stockholm?]. Stockholm, Sweden: KTH Avdelningen för Industriell Ekologi.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Thousand Oaks, CA: Sage.
- Platt, J. (1992). 'Case study' in American methodological thought. *Current Sociology*, 40, 17–48.
- Poldermans, C. (2005). *Sustainable urban development – The case of Hammarby Sjöstad*. Unpublished manuscript, Department of Human Geography, Stockholm University, Stockholm, Sweden.
- Ragin, C. C., & Becker, H. S. (1992). *What is a case? Exploring the foundations of social inquiry*. Cambridge, MA: Cambridge University Press.
- Rittel, H., & Webber, M. (1973). Dilemmas in general theory of planning. *Policy Sciences*, 4, 155–169.
- Schön, D. (1991). *The reflective practitioner. How professionals think in action*. Farnham/London: Ashgate Publishing.
- Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- Stake, R. (1998). Case studies. In N. Denzin & Y. Lincoln (Eds.), *Strategies of qualitative inquiry* (pp. 86–109). Thousand Oaks, CA: Sage.
- Stockholm City. (in press). *Environmental programme for Hammarby Sjöstad*. Stockholm, Sweden: Stockholms Stad.
- Stockholm City. (2007). *Hammarby Sjöstad – A unique environmental project in Stockholm*. Stockholm, Sweden: GlasHusEtt.
- Svane, Ö. (2007). Situations of opportunity – Hammarby Sjöstad and Stockholm city's process of environmental management. *Corporate Social Responsibility and Environmental Management*, 15, 76–88.
- van Maanen, J. (1988). *Tales of the field: On writing ethnography*. Chicago, IL: University of Chicago Press.
- Vestbro, D. U. (2005). *Conflicting perspectives in the development of Hammarby Sjöstad*. Unpublished manuscript. Retrieved from <http://infra.kth.se/bba/HamSjostad.pdf>
- von Wright, G. H. (1971). *Explanation and understanding*. Ithaca, NY: Cornell University Press.
- Whyte, W. F. (1943/1993). *Street corner society*. Chicago, IL: University of Chicago Press.
- Winch, P. (1958/1994). *The idea of social science*. London, UK: Routledge and Kegan Paul.
- Yin, R. (1984/2009). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.