

Research log

Code	Project title	Project summary	Organisation	Status
B(98)16	Life Cycle Costs for M&E Building Services	The project aimed to produce guidance for NHS Managers and consultants through the publication of a WLC Application Guide focused on Building Services and including an evaluation of existing published WLC data. The methodology included the creation of two questionnaires – the initial one requested basic hospital data such as type, local surroundings, and the second one asked more specific questions on energy usage and maintenance data. The central part of the report is the WLC model. This is a powerful tool that allows DH to carry out detailed analysis of hospital energy costs, maintenance costs, etc.	University of Northumbria – Department of the Built Environment	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(99)07	The use of small negative air ions to disinfect MRSA and other airborne pathogens in UK hospitals	This study investigates the impact of negative ionisation on the disinfection of air. Ionisation is a safe, low cost technology that has been shown to have bactericidal and air cleaning properties. The air ionisation study forms a key part of a much larger research programme undertaken at the University of Leeds into the use of engineering controls to disinfect Mycobacterium tuberculosis (MTB), Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA), and other airborne pathogens.	University of Leeds	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(99)19	Benchmarking good practice in standardisation of processes and components in PFI projects within the health sector	The report presents the outcome of a study that relates to the use of standardisation in NHS PFI hospital development schemes. The project was part of an exercise aimed at eliciting the characteristics of standardised processes and the use of standardised components for the PFI schemes in the health sector. The project was undertaken through a review of nine active PFI schemes in the health sector. Methodology used for the project included a workshop and interviews. This area presents the greatest challenge for the deployment of standardisation on NHS PFI schemes, but could equally provide the highest benefits, in terms of economic advantages and simplification of PFI as a procurement mechanism for health sector developments.	Loughborough University	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(99)31	Project SHIFT (Substitution of Hospital Inpatient-Focused Technology)	Substitution has been a feature of the NHS since its inception. It is defined as the continual regrouping of resources, across and within care settings, to exploit the best and least costly solutions in the face of changing needs and demands. Three principle items compose substitution: technology, workforce and location of care. The project focuses on likely changing technologies - pharmaceuticals, instrumentation and communications - that might occur between 2000-2020 and be applied to those medical conditions that affect older people. By anticipating the new approaches that will ensue, the increasing role and functions of community hospitals and home care, and the diminution of activities at the DGH will be assessed. Consequent adaptations that will be required to both community hospital and home premises are explored in some detail to assist future design guides.	University of Glamorgan	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).

B(99)38	Environmental assessment tool for health care buildings	The project was 50% funded by DETR and develops a family of simple, specific software tools based on the existing Building Research Establishment's (BRE) Environmental Assessment Methodology (BREEAM) software to carry out environmental assessment of healthcare buildings. These software tools will allow trusts to efficiently measure and monitor the environmental impacts arising from their property portfolio and inform strategic decision making at all levels.	Capitec	COMPLETED: NHS Environmental Assessment Tool (NEAT) CD-ROM.
B(99)54	Architectural healthcare environment and its effects on patient health outcomes	This project continues the programme of investigation into the clinical and economic consequences of good architectural design in healthcare buildings. Data from previous studies has indicated that the healthcare environment may have a significant role to play in assisting patient recovery. This project develops proposals on such factors for use by designers and managers of NHS healthcare buildings.	University of Sheffield	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(99)56	The use of EFQM Excellence Model for performance tracking & improvement of FM services	The purpose of the research was to test the viability and robustness of the European Foundation for Quality Management Excellence Model (EFQM) as a means of: measuring NHS facilities services performance; identifying performance differences and variances between different Trusts; enabling improved alignment of FM services to key corporate and clinical objectives. Methodology used for this project included a comprehensive literature search. Three Trusts sites were selected for pilot status, which worked with the project team to develop and test the application of EFQM processes and tools.	Clifford G Price Associates Ltd	<u>COMPLETED:</u> available through web-link: www.topsproject.org
B(00)03	Standardisation & Pre-assembly – Guidance & Toolkit Implementation (Phase 1)	The aim was to use workshop principles to introduce the core project design team to standard and pre-assembly opportunities after first investigating the key business drivers and constraints for the Royal Preston Hospital development project. The principle objective of the workshop was to drive out elements that benefit the project through adopting standard components or elements of pre-assembly. The workshop delivered two separate outcomes. For DH it furthered an aim to investigate opportunities for introducing standardisation and pre-assembly solutions for hospital projects, and for the Royal Preston Hospital development project design team it identified their options and exposed the limitations they face.	Loughborough University	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(00)35	Differentiating between public and private space in hospitals	Many of the dissatisfactions expressed by patients and visitors about hospitals arise from a lack of clear definition and differentiation between public and private spaces in hospitals. This is unlike other building types such as hotels, restaurants or airports where clients see nothing of, and can be unaware of, all the 'behind the scenes' functions. This project provides a comparative study of the physical differentiation of public and private spaces in ten recently completed hospitals and the public's experience of them.	Ann Noble Architects	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).

B(00)41	Raising the standards in NHS wards	The objective of the research was to provide DH with an evidence based understanding of the factors that are most closely associated with high standards of hospital cleanliness. The research involved a comparison of the hospitals designated as 'exemplar' and those 'requiring special measures' (RSM) by the NHS Executive Patient Environment Action Teams during 2000 and 2001. Methodology included semi-structured interviews using a questionnaire guide. The research has identified a complex constellation of factors that affect the ability of a hospital to create and maintain a clean, welcoming and comfortable environment for patients and staff.	Institute of Healthcare Management	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(00)44	Investigation & assessment of attitudes and perceptions of the built environment in NHS Trust hospitals	The study investigated the perceptions and attendant behavioural attitudes of stakeholders, including patients and visitors to the built environments and supporting facilities provided by a NHS Trust hospital. The study used a variety of methodologies to collect empirical data. This included an extensive literature survey and research review, one-to-one patient interviews, a large questionnaire survey, patients' picture stories, a novice-expert technique and a series of futures. The study found that the stakeholders perceived the built environment of the hospital as a supportive health environment and as an important health resource. The empirical evidence examined suggests that the notions of patient-friendly environments held by participants in the study were based on three conceptual visions of the role and function of the built environments of health care facilities. The study also provides a framework for appraising potential designs for the built health care environment in terms of its internal and external environments and points to the direction of potential future research studies.	University of Salford	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(01)01	How do we lengthen the useful life of hospital buildings?	The project investigates the factors believed to effectively lengthen the life of hospital buildings: the form of structure and construction which will influence durability; the mixture of materials and the whole life cost implications attached to these; planning dimensions used in the organisation of spaces; organisation of internal spaces; the modularisation of the design and great pre-fabrication of key modular components; the integration of pre-fabricated and traditional forms of construction.	Percy Thomas Architects Ltd	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(01)02	Lighting & colour design for hospitals	Investigation into the important impacts on patient well being and recovery rates of: the application of colour and lighting; the uses of colour, with appropriate lighting, as a tool for coding, navigation and wayfinding; and the visual environment as a vital element for hospital staff productivity. The study is based on expert audits, site surveys, focus groups, testing, previous knowledge and research.	BRE & Kingston University London	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk) or as a priced hard copy from The Stationary Office (TSO): www.tso.co.uk

B(01)03	Design for health: the impact of a new hospital environment on children, families and staff	A project based upon a new children's hospital in which art and design have been integral from the outset. The aim is to assess the immediate effects and early adjustment to the new environment with a view to longer evaluative studies. Research questions raised are: how does the built environment of the new hospital impact on sick children, their families and the staff caring for them; what differences have there been among parents, children and staff following the move to the new hospital?	University of West England, Bristol	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk) or as a priced hard copy from The Stationary Office www.tso.co.uk
B(01)05	An ecological footprint of the NHS	This is a baseline environmental impact study of the NHS using materials flow analysis and Ecological Footprinting technologies. The project provides a detailed examination of the ecological impact of the NHS, examining impact of waste generation, energy use, material consumption, transport and land use. The project offers encouragement to recognise the value of sustainable development.	Stockholm Environment Institute	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(01)06	Reduction of Hospital Acquired Infections (HAIs) by Design	A study which explores the perceptions of Infection Control Officers of their new role in relation to capital developments and also the views of health building design professionals on current guidance and the need for additional guidance. The study promotes the opportunity for interdisciplinary working between infection control officers and design professionals.	Ann Noble Architects	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(01)08	Evaluating the implementation and impact of a non-clinical Ward Co-ordinator role within an integrated ward team	1. To evaluate the implementation of a Ward Co-ordinator role as an integral member of a ward team using measures that focus on team function and quality of the patient's hospital experience. 2. To evaluate the Practice Development Unit (PDU) accreditation model as a vehicle for delivery of this integrated inter-disciplinary approach.	University of Leeds	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(01)09	Ventilation Design Guidance to Minimise Ingress of Air Pollution in Hospitals	This project produces design guidance specifically for hospitals to ensure effective ventilation and hence good indoor air quality in hospitals located in polluted urban areas. It develops new ventilation guidance on minimising the ingress of external pollution into office buildings located in polluted and urban environments recently published by BRE for the more complex hospital situation. It will lead to improved indoor air quality in hospitals, thus promoting the recovery of patients and facilitating energy and cost savings.	Bradshaw Gass & Hope	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(01)12	The use of balanced scorecard for strategy communication and performance management in NHS Trusts	This research project in collaboration with different NHS Trust' Facilities Directorates applies the Balanced Scorecard (BSC) performance management framework in real life. Case study approach is applied together with an appointment of a steering committee to guide the research project. The membership for this meeting is drawn from Facilities Directorate of the NHS Trusts. Some of the objectives of this project are summarised below: -to understand the FM strategies and its communication within Facilities directorates' strategies - to develop a BSC. Identify relevant measures that are aligned with the Facilities Directorates strategies.	University of Salford	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).

		<ul style="list-style-type: none"> - to develop an appropriate assessment tool. - to implement the developed BSC within Trust environment (through the action case study) - to develop BSC implementation and maintenance guidelines. 		
B(01)13	Designing for health: architects, arts and design at the new James Cook University hospital	The project sought to provide evidence about whether good design improves patient care. The south Cleveland Hospital in Middlesborough was being rebuilt as a major new tertiary facility (James Cook University Hospital) taking in the facilities of two other hospitals from the same NHS Trust. The CE of the trust and his team have planned a new hospital to represent the values of patient-centred care despite its size and complexity. They have attempted to do this by incorporating a high standard of architectural design, appropriate decoration and artwork. The research aims to evaluate the success of this strategy in terms of patient perceived and actual benefit, and benefits to staff and other uses.	University of Durham	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(01)16	Rethinking hospital design and briefing (development study)	The study explored new ways of rethinking the approach in achieving more appropriate, efficient and innovative healthcare solutions - focussed on the care of patients, staff and other users. The study re-evaluates the relationship between physical building form - typology and the operational requirements reconsidered outside the established practice of configuration through planning departmental requirements and adjacencies etc.	DEGW	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk)
B(01)17	Design Guidance for Patient Centred Primary Care Facilities	The project identifies principles from a wide range of sources and applies them to facilities for the provision of primary dental care in the General Dental Services. This takes account of current and future developments in primary dental care delivery and the perceived needs of dentists, their staff and patients. The methods used include establishing a relevant database from perceived needs of dentists, their staff and patients.	G&S Research	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk)
B(01)20	ONE PATIENT ONE ROOM – Theory & Practice: An Evaluation of Leeds Nuffield Hospital	The research project collects and analyses data on patients, clinical as well as resourcing staff and visitors. The multi-purpose approach to data collection is adopted using focus groups, questionnaires and interviews with key personnel, archival/desk research and document review etc. This exploits the LEAF (learning-from-experience) methodology successfully applied on other research projects based upon identification of client groups (users and paying clients), designers and building teams and operators.	University of Sheffield	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(02)01	Development of an assessment tool to measure the elements of the inpatient environment associated with the quality of patient care	Funding to develop a quantitative assessment tool that includes the items identified by review as important environmental features. The psychometric properties of the tool will be robustly tested. With the recommendation that all district hospitals establish stroke units by 2004 (National Service Framework for Older People, 2001), it is important to be able to gain into the positive features of this care environment and ensure that they are successfully implemented and monitored in the newly developed units.	University of Leeds	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).

B(02)06	Designing to Optimise Mental Health in Care Homes for Older People	The purposes of this research study was: a) to generate objective, valid and reliable measures of the physical environment in care settings for older people; b) to test the hypothesis that the physical environment in care settings for older people is an important influence on mental health outcomes; c) to identify the influence of individual design features on different mental health outcomes, and; d) to enhance the empirical knowledge base for designing care homes that minimise psychiatric distress in residents.	Oxford Centre for Sustainable Development, School of Architecture, Oxford Brookes University	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk)
B(02)08	Natural ventilation provision in hospital	This research provides clear guidance to NHS designers and specifiers on the provision of natural ventilation in hospital buildings.	BRE	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(02)09	An evidence based model for establishing the performance of hospital ventilation systems	The overall aims of the project are; (i) to identify those sites and clinical applications which are critical to the airborne spread of infection and which may require specialist mechanical ventilation; (ii) to develop robust evidence-based models which can be used by DH Estates & Facilities to specify the performance criteria of ventilation systems for a range of clinical applications. The specific objectives of the project are: - to establish current and best practice in the ventilation of hospitals. - to identify sites of critical importance to the spread of airborne infection. - to develop a robust model for evaluating the risk of acquiring airborne nosocomial infection. - to develop a robust model for specifying the performance criteria of mechanical ventilation systems. - to demonstrate how these models should be applied to aid ventilation system design and risk assessment.	University of Bradford	COMPLETED
B(02)11	The effects of the interior environmental design on patients and staff in maternity facilities	Investigation of the impact of the interior environment on patients and staff in maternity facilities. Although there have been a number of previous studies which have examined the effect of environment on patient health and wellbeing, this study aims to concentrate specifically on maternity facilities and the particular needs of this user group and the relevant staff. The study will focus on evaluating different maternity units in Britain and will include an analysis of best practice design models.	University of Dundee	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk)

B(02)12	Incorporating a Sustainable Dimension In Primary Health Care	<p>The aim of this research was to assess the implementation of long term sustainability issues in local community health schemes such as the LIFT programme, and to consider the effectiveness of the NHS Environmental Assessment Tool (NEAT) in aiding the delivery of sustainable projects. This is done by:-</p> <p>i). comparing and contrasting the methods used to incorporate a sustainability agenda within a health facility. The study evaluates the effectiveness of NEAT by measuring retrospectively a recently completed Health Centre.</p> <p>ii). examining the design and procurement process of Phase 1 LIFT schemes to determine the extent to which an environmental assessment tool and Key Performance Indicators on sustainability and environment can provide a robust method of ensuring sustainable design through the procurement process.</p> <p>iii). evaluating the opportunities for and the value of ownership of a sustainable agenda by users (staff and patients) in community health schemes.</p> <p>The report informs the application of NEAT to LIFT projects and supports the incorporation of sustainability in the rollout of LIFT.</p>	Northumbria University	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(02)13	Empirical review of NHS Estates ergonomic drawings	The aim of this proposal is to develop and carry out, in collaboration with NHS Estates, a programme of research to review and empirically validate existing, and revised, ergonomic drawings using systematic task analysis methodologies and up-dated anthropometric data. This will further research in the area of the impact of the built environment.	Loughborough University	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(02)14	ASPECT – A Staff/Patient Environment Calibration Tool	The ASPECT project delivers a tool to assist in the briefing and design of the staff/patient environment. The concept of evidence-based medicine has become an accepted way forward in recent years, and this project extends that idea to the patient's environment, seeing it as part of the treatment. The tool enables more considered and objective examination and comparison of both existing and new designs in terms of the contribution that they make to the patient environment. The tool can also be used to evaluate the impact of the working environment on staff well being. The Research team has developed a similar tool for the appraisal of care homes for older people, in a three-year project funded by EPSRC under the EQUAL programme.	University of Sheffield	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk)
B(02)15	Improving the patient environment based on existing research knowledge and using only recurrent expenditure	There is now strong evidence that good design in the healthcare environment can make a significant difference not only to the lives of patients and their carers but also to actual health outcomes. However the available studies so far have looked at either new build situations or complete refurbishment (Lawson and Phiri 2000; Lawson 2002; Lawson and Wells-Thorpe 2002). This proposed study examines what can be done with rather smaller sums of money available as recurrent expenditure on the ward budgets themselves.	University of Sheffield	COMPLETED

		<p>This study will look at Adams Ward at the Radcliffe Infirmary in Oxford. This 26 bed unit is for treatment of older people who in many cases it is hoped will be able to return to their own homes or to a care home. On average patients stay in this ward for about 40 days. It seems likely then for such a substantial period the actual environment of the ward is likely to make a significant impact on the patients' progress and recovery. The design of the ward is irregular and yet open plan, with beds mainly in bays of approximately 4 beds.</p>		
B(02)16	<p>What is the size and nature of the current need for single room isolation in hospital, and how does success or failure to isolate patients affect the control of methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)?</p>	<p>Multiple antibiotic-resistant organisms constitute a major threat to controlling the dissemination of resistance genes. Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) in particular is endemic in most UK hospitals. Isolation of patients who are colonised/infected with MRSA in single-bedded rooms is standard infection control practice to reduce the risk of spread. However, the impact of successful versus unsuccessful patient isolation when advocated for the control of MRSA is unknown. Lack of data on the efficacy of patient isolation has contributed to the absence of definitive guidance on the ratio of single rooms to total beds within acute NHS hospitals.</p>	<p>Leeds Teaching Hospitals NHS Trust and University of Leeds</p>	<p>COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).</p>
B(02)21	<p>Research, design, development and virtual modelling of a modular acute bed-space cluster</p>	<p>The aims of the project were the research, design, virtual prototyping, testing, revision and detail development of optimal clusters of acute bed-spaces. The four key factors are:</p> <ul style="list-style-type: none"> - flexibility and modularity - the holistic patient experience - reduction of cross-infection - cost effectiveness and economic considerations (including both simple low cost recommendations; and broader issue such as reduced patient healing time; and life cycle costs) <p>The project has the potential for more general adaptation to ward design.</p>	<p>De Montfort University</p>	<p>COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk)</p>
B(03)02	<p>The effect of humidity on the survival of MRSA on hard surfaces</p>	<p>The aim of this project was to measure the effect that different humidities have on the survival of methicillin-Resistant <i>Staphylococcus aureus</i> (MRSA) on hard surfaces. MRSA has been shown to have the ability to survive for long periods in health care environments. Adjusting the humidity of the environment may inhibit this effect and make it harder for MRSA to persist for long periods.</p> <p>The research involves a suspension of known numbers of MRSA being inoculated on to a range of hard surface sample materials and incubated in controlled environments under different levels of humidity. Samples include different strains of the species, and these will be recovered and cultured using traditional techniques to measure the effect of humidity on MRSA viability (and cultivability) over time.</p>	<p>Health and Safety Laboratory</p>	<p>COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).</p>

		The outcomes could include modification of the indoor environment of health care facilities as a cost-effective method of decreasing the risk of MRSA persistence. Low cost adjustments to ventilation systems are capable of large-scale internal air quality effects which may confer benefits to patients and staff who could be exposed to MRSA within the hospital environment.		
B(04)01	Risk Assessment of the Slip Resistance of Floors	The aim of this project was to collate existing knowledge and incorporate the historical and ongoing research of the Health and Safety Laboratory (HSL) into one document written in technical language but without the jargon of science or the huge amount of experimental evidence contained in the research reports. The primary objective of the work is to enable those who enforce legislation or who participate in the procurement and provision of floors – clients, designers, facility managers, manufacturers – to understand their duties and obligations to those who use floors – the workforce and the general public. This is directly relevant to the NHS.	CIRIA	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(04)02	Developing an Integrated System for the Optimal Selection of Hospital Finishes	The overall aim of the project was to develop and implement an integrated framework for the selection and management of hospital finishes. The main contribution will be a clear and simple system for the selection and management of hospital finishes in order to meet health, safety, statutory and environmental needs over its life cycle in a cost effective way. Key characteristics of this application include: <ul style="list-style-type: none"> · multiple decision criteria including budget constraints, minimum performance requirements, social, legal, environmental, health and safety criteria · different relative weights of importance of criteria for various hospital rooms and spaces · systematic establishment of minimum performance thresholds and trade-off criteria · derivation and updating of relative weights of importance of decision criteria · automatic selection of the ideal alternative(s) and assessing the confidence level of the decision 	The Robert Gordon University	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).

B(04)03	Disseminating Good Design Practice	This project will link the work previously done to create ASPECT and the parallel AEDET Evolution tools to the NHS Design Portfolio. As a result a new 'Exemplar' layer in the ASPECT/AEDET tools will be created. The material in the Design Portfolio represents projects that are thought to be in some way exemplary: they are nominated by Trusts and patients which gives the Portfolio an authority. However the Portfolio has many deficiencies as a design support tool and is unlinked to the new ASPECT and AEDET tools. It is also the case that people using ASPECT and AEDET can so far not directly look for detailed examples of good practice as they complete them. Both ASPECT and AEDET have guidance layers to assist, and ASPECT also has an 'evidence' layer that points to the research evidence. This project will effectively create an 'exemplar' layer by linking to appropriate images in the Design Portfolio.	University of Sheffield	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(04)04	Evaluating the clinical environment for users of the Child and Adolescent Mental Health Services	The purpose of this project is to evaluate the views of users and non-users of the clinical environment, locations and sites of the Child and Adolescent Mental Health Service (CAMHS) in Dunstable and Luton. The Academic Unit at Bedfordshire Child and Adolescent Mental Health Service (CAHMS) currently have an ongoing service evaluation project, monitoring outcome for children and families. The current intended research project would act as an extension to the existing outcome project.	University College Northampton	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(04)05	Assessment of Planned VHF Facility	This follows on from previous work carried out by BSRIA on positive pressure isolation rooms. This work builds on the rationale of using protective values which indicate a level of patient protection in terms of log reduction. This has been developed using actual size models which simulate external and internal environmental influences to mimic real time situations.	BSRIA	COMPLETED
B(04)08	Sustainable Buildings Learning Network	This proposal outlines plans to support and encourage the implementation of sustainable practices on primary and acute care new build projects by creating a Learning Network for key decision-makers in the building procurement process - i.e. the clients and funders who control the budgets and project briefs. The Network will aim to: <ol style="list-style-type: none"> 1. Draw together existing sustainability information & guidance into a coherent framework for Trusts 2. Increase understanding about the need for and benefits of a sustainable approach 3. Build capacity for the delivery of sustainable projects 	Sustainable Development Foundation	COMPLETED
B(05)02	Generic rooms design to maximise clinical functionality	The purpose of this project is to develop and test functional dimensions for specified clinical activities in typical (generic) rooms. The scope of this project will be based on policy priorities, for example Intensive Care, Care of the Elderly, Renal Dialysis, Cardiac Nursing and In-Patient Chemotherapy.	Loughborough University	COMPLETED

B(06)03	Design Strategy for low energy ventilation and cooling of health buildings	This project is design, in the abstract, a quadrant of a large health building, with a meaningful configuration of spaces of recurrent size, function and occupancy giving the likely pattern of internal heat loads, and to apply the various environmental design strategies employed successfully for other building types to explore the potential reduction of reliance on mechanical air handling systems and their consequent carbon dioxide emissions. The strategies will be rigorously tested using both computational fluid dynamics and dynamic thermal models. Physical models will also be tested at the BP Institute in Cambridge. For the refurbishment case, the emerging strategy(s) for the new build will be superimposed upon an abstracted representative slice of a type hospital of the last 40 years. The results will be translated into lifecycle energy saving predictions. The relative capital cost implications will be investigated and expressed in terms comparable with data held for 'typical' large health buildings.	University of Cambridge	CURRENT
B(06)05	Protein detection/measurement on surgical instruments	This proposal aims to investigate the presently available techniques and technologies for the detection of residual protein after conventional surgical instrument reprocessing. This will include existing recommended technique analysis and criticism together with a small number of likely alternatives.	William Harvey Research Institute, Queen Mary's school of Medicine and Dentistry	CURRENT
B(06)06	The effect of humidity on the survival of <i>Acinetobacter</i> spp. and other Gram-negative nosocomial pathogens in the air and on clinically relevant surfaces	This study investigated the influence of air humidity on the survival of Gram-negative bacterial species associated with nosocomial infection within the clinical environment. The study aims to evaluate: (i) the influence of humidity on bacterial survival in the air, on inanimate surfaces and in bodily fluids, and (ii) the potential of humidity control as a measure to prevent the spread of infection. Given that many infections acquired in the intensive care, high dependency, burns and haematology/oncology settings are associated with Gram-negative bacteria, there is pressing need to gain a new understanding of the ways in which environmental factors, such as humidity, contribute to the spread of infection, and to establish an evidence base which can be used to underpin both clinical and environmental practice.	University of Bradford	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(07)05	Determining the link between the management of healthcare waste and the prevalence of nosocomial infections within 3 case study NHS trusts in England	The aim of this project is to use a multi-disciplinary team to examine the impact of the perceptions and practices of staff in the management of healthcare waste on the risks of selected healthcare-associated infections (HCAIs).	University of Northampton	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).

B(07)08	What is the potential for airborne dispersal of C diff from symptomatic patients	The identification of scenarios and procedures that are associated with the airborne dispersal of C. difficile; to characterise the magnitude of airborne dispersal in relation to surface levels of environmental contamination; to establish the time course of risk of airborne dispersal in relation to symptomatic infection and using sophisticated DNA fingerprinting to establish an epidemiological link between airborne dispersal, environmental contamination and cases of C-difficile isolation.	Leeds Teaching Hospitals NHS Trust	COMPLETED
B(08)05	Evaluation of Hillingdon Hospital Single Rooms Pilot Site	The project aims to evaluate the impact of the single room pilot site at Hillingdon Hospital relative to multi-bedded wards. The evaluation will seek to capture information on multiple outcome measures including: <ul style="list-style-type: none"> · Clinical outcomes; · Economic outcomes; · Patient and carer satisfaction; Spatial outcomes.	York Health Economics Consortium	CURRENT
B(08)06	Development of MRSA Infection Model within healthcare facilities	The aim of this research is to use numerical tools to simulate the spread of airborne MRSA pathogens within the built environment. Efforts will also be made to validate this method by collecting and analyzing data on air samples from an Intensive Care Unit against the level activity of Patients, Healthcare Staff and Visitors.	University of Warwick	CURRENT
B(08)08	Making Existing Healthcare buildings Sustainable ('MESH')	The research will focus on five case study buildings across acute and primary care services, located in different parts of the country. It will particularly find out how energy is being used in different types of healthcare buildings and identify how this energy use could be reduced. It will also explore how other aspects of sustainability could be addressed in the buildings – water use, renewable energy, and how to tackle social aspects of sustainability by engaging the local community. This data will be used to write a concise handbook for facilities managers and Trusts explaining how to address sustainability issues in their buildings.	CIRIA/Sustainable Development Foundation	COMPLETED: available through Space for Health (www.spaceforhealth.nhs.uk).
B(09)02	Evaluating the implementation of a new psychiatric inpatient facility: a mixed methods approach	This research programme will provide a mixed methods evaluation of the ADVANCE Project, a psychiatric in-patient re-provision by Tees, Esk and Wear Valleys NHS Foundation Trust in Middlesbrough supported by the Private Finance Initiative (Roseberry Park replacing St Luke's Hospital).	Tees, Esk and Wear Valleys NHS Foundation Trust / Durham Uni	CURRENT

B(09)05	Combating Hospital Acquired Infections with Cold Gas Plasmas	Study on how to employ gas plasmas in healthcare settings. We can envisage two possible methods and we want to examine both of them. One possible application envisages an installed system in which a vacuum system transports bacteria-laden dust and squamae through a 'plasma curtain' where they will be destroyed. In the second application a portable 'plasma brush' would be used to directly treat and disinfect surfaces. In order to obtain an accurate assessment of the potential of each of these types of plasma we will conduct laboratory-based experiments using environmental isolates of C. difficile and MRSA. We plan to monitor the fate of the reactive chemical species produced by the plasmas, which recombine to form harmless gas species, as any accumulation of the former might affect the rate at which the plasma could be employed. Moreover, we shall work closely with health economists in order to obtain realistic cost estimates of our proposal, and with healthcare facility management professionals to ensure that our solutions constitute a significant addition to current disinfection procedures.	Loughborough University	CURRENT
B(09)07	Development of Doped Diamond Like Carbon Coatings for Producing Low Adhesion Surfaces	The purpose of this project is to develop an industrially produced doped diamond like carbon surface coating for reducing of protein and bacterial adhesion on surgical instruments and other stainless steel surfaces that are prone to contamination. It is the intention that, by the end of the project, a coating will be selected that can be trialled clinically. The project builds on the findings of a recent study we conducted, which showed both theoretically and in practice that surface coatings of diamond like carbon (DLC) containing a doping element reduce protein adhesion substantially compared with both standard DLC and unmodified stainless steel surfaces. They are also very hard, scratch resistant and biocompatible. We have determined from the industry that using these coatings would be very low cost on an industrial scale once a manufacturer had geared up to large scale production, ensuring commercial viability of the coated product. This project will focus on an empirical approach to the coating development process. In order to facilitate a route to commercial production of the coatings, we shall throughout the	University of Dundee	CURRENT
B(09)09	The sound environment for critically ill patients in NHS hospitals	The aim of this research was to explore the acoustic effects in NHS hospitals, with a particular attention to critical care environment where noise is a major problem, and then address the resulting design issues as part of the optimisation of the overall physical environment. Detailed objectives include (1) to review the acoustic indicators and criteria as well as possible design conflicts between acoustics and other issues in the overall physical environment design; (2) to survey the current acoustic conditions in NHS hospitals through case studies in selected hospitals, by considering both noise levels and reverberation conditions; (3) to examine the effects of acoustic environment, as part of the overall physical environment, on both patients and staff in terms of acoustic comfort and healing, through interviews and collecting physiological data;	University of Sheffield	CURRENT

		<p>(4) to explore the effectiveness of some acoustic treatments including absorbers/diffusers/insulators and sound masking systems considering therapeutic sounds, by changing acoustic conditions in selected sites, and by carrying out computer-based acoustic modelling; and</p> <p>(5) to carry out data analysis, considering the relationships between various parameters and acceptable acoustic criteria and consequently, to develop practical guidelines and recommendations for hospital acoustic design, as an integrated part of the optimisation of the overall physical environment.</p>		
B(09)12	An exemplar low energy, low carbon, sustainable acute hospital	<p>The West Hertfordshire Hospitals NHS trust, being in the early stages of progressing a major hospital redevelopment, wished to optimise its investment whilst delivering maximum sustainability for advances in medical science and patient and staff environments.</p> <p>In order to achieve this, the Trust commissioned an academic research team to work alongside the Trust's own design team to test these design proposals using activity-space modelling techniques and robust global warming predictions to detail the environmental conditions that the new hospital would be subjected to over the 30-50 year life of the building.</p>	University of Cambridge	CANCELLED
B(09)14	Room ventilation and airborne infection risk in general practice waiting rooms in London	<p>Little is known about actual rates of room ventilation in primary care waiting rooms. Tuberculosis transmission is airborne, and there is evidence to suggest an airborne component to influenza transmission. The increasing incidence of tuberculosis in London and the prospect of epidemic influenza make crowded general practice (GP) waiting rooms a potentially important target for airborne infection control interventions. The aim therefore is to measure ventilation in general practice waiting rooms in London and to estimate the risk of airborne tuberculosis transmission and the impact on epidemic influenza transmission.</p>	Imperial College Healthcare NHS Trust	CURRENT
B(09)19	The effect of synthetically generated hydroxyl radicals on the survival of nosocomial pathogens in the air and on surfaces	<p>This 24-month study will investigate the effectiveness of synthetically generated hydroxyl radicals (HRs) for disinfecting air and surfaces in a clinical context. Unlike some chemical 'fogging' disinfection technologies, which first require room spaces to be vacated, this novel technology has the great advantage that patients/personnel can remain present while disinfection takes place. As such, it has the potential to greatly reduce both the logistical problems and costs associated with hospital disinfection. While the technology is promising, all the performance data that exists in the public domain (bar one small food-related study [1]) has been produced by manufacturers, with the result that there is need for an independent scientific study to assess the claims made for this technology.</p>	University of Bradford	CURRENT

B(10)04	Built environment in acute care for older people	Evidence-based design is increasingly recognised as a method for achieving a safe and effective hospital environment. However, little systematic research has been carried out to identify design criteria and features that improve admission and assessment processes, care provision, and recovery for older inpatients. This is a multi-method study which will synthesise best evidence from design and healthcare literature and combine this information with patient, family carer and professional views on facilities for acutely ill elderly patients admitted to an acute hospital inpatient environment. The purpose of the study is to identify evidence-based design criteria and features that improve the processes, quality or outcomes of acute services for older inpatients.	Sheffield Institute for Studies on Ageing - Sheffield University	CURRENT
B(10)05	Biocide impregnated surface materials for use in clinical areas - under what conditions do they work?	<p>This 36 month study will be used to develop a protocol and test the activity of range of antimicrobial surfaces against two major pathogens, methicillin-resistant <i>Staphylococcus aureus</i> and <i>Clostridium difficile</i>. The development of such a methodology will provide the NHS with a robust tool to distinguish the activity of different commercially available antimicrobial surfaces. Furthermore, information on the real activity of the most common antimicrobial surfaces found in the healthcare environment will help in the decision processes as to whether these materials (often coming at a premium cost) are needed or not.</p> <p>At the conclusion of this project, the aim is to provide a comprehensive guidance document for the NHS, potentially in the form of a best practice document or Health Building Note that would advise on the purpose and suitability of antimicrobial materials. In particular, this would cover antimicrobial material performance with respect to i) surface moisture levels, ii) biocide type and concentration, iii) target pathogens, iv) soiling levels, v) contact time and vi) antimicrobial lifetime.</p>	Cardiff University	CURRENT
B(10)08	Developing a falls reduction toolkit to improve the hospital environment: clinical and environmental factors affecting falls in dementia wards	This project will combine environmental safety expertise with clinical understanding of how inpatients' conditions may affect their perception, cognition or mobility to develop a toolkit to reduce falls. Paired observers, from clinical and environmental safety backgrounds, will jointly assess how patients vulnerable to falls interact with their environment. This will be supported by environmental measurement, analysis of reported falls and focus groups with patients and staff. The toolkit could be used to inform the design of new builds and ward refurbishments, but it is also likely to identify improvements that could be introduced at low cost e.g. adjustments to lighting levels or signposting of toilets that is comprehensible to patients with dementia or visual deficit.	Health & Safety Laboratory	CURRENT

B(10)15	Healthcare Environment Architectural Resource (HEAR)	This proposal is for further development of an architectural evidence-base. An evidence database essentially makes a link between structural and process measures of the estate and patient and staff outcomes. It is thus an essential tool in a system for measuring quality and safety in the healthcare estate. It indicates how the designed healthcare estate can impact on such things as length of stay, reduction of falls, rates of cross-infection, risks of clinical error, consumption of medication. It also shows very detailed results such as heart rates, sleep patterns, staff absenteeism and the like. It also shows links to more qualitative measures such as patient satisfaction and staff recruitment and retention. The research in this field is international and extensive.	University of Sheffield	CURRENT
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