



## INTRODUCTION

Effective Learning Environments (ELE) Ltd, and St Mary's School & College, Sussex share a commitment to inclusive and integrated learning solutions in the interests of optimum outcomes for pupils and their associated community.

In 2007 ELE introduced members of the UK Institute of Acoustics (IOA) Speech & Hearing (S&H) Group to St Mary's with a guided tour of the school provision. The Group comprises professionals concerned with the mechanics and physical factors for optimising speech and hearing potential. School visitors comprised six acousticians – led by Helen Nichols of ELE - who then experienced at first hand aspects of the physical, management, clinical, social and technical and therapeutic environment. A range of spaces in sequence of general teaching, specialist (practical) teaching and therapy spaces, communal teaching and social spaces; spaces for whole-class, for small group, and one-to-one were visited. As the school was in session the import of designed choice for room performance and intelligibility were vividly illustrated and acknowledged as essential. The group appreciated that in its broadest sense, it is the interaction between disciplines that characterises St Mary's integrated and highly successful approach to managing Speech and Hearing in Noise.

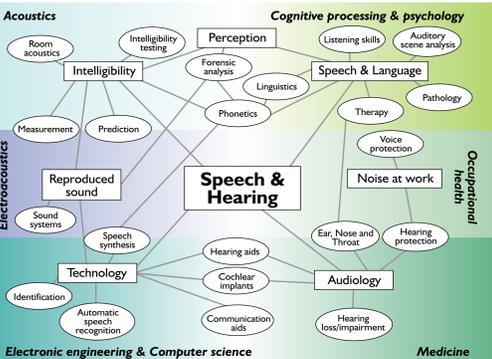
The S&H committee flourished with the addition of a broader range of professionals including experts in Intelligibility, Speech and Language, Reproduced Sound, Audiology, Technology as illustrated in the panel below. Their active contributions to the work of the S&H Committee inspired and enabled a one day conference on Speech and Hearing in Learning Environments at the Royal Society in London (29 01 08). Its success was acknowledged by delegates from the wide range of related disciplines attending both from the UK and abroad.

The panel below demonstrates the range of complementary concerns and interests of the S&H group. Proceedings from the one-day meeting of 29 January 2008 are available from [Linda.Canty@ioa.org.uk](mailto:Linda.Canty@ioa.org.uk) or [publications@ioa.org.uk](http://publications@ioa.org.uk).

## Concerns & Interests of Speech & Hearing Group

### INSTITUTE OF ACOUSTICS (IOA) CONCERNS AND INTERESTS OF THE SPEECH AND HEARING GROUP

The Speech and Hearing Group provides a forum for IOA members with an interest in acoustic aspects of speech and hearing. Technical meetings offer an opportunity for knowledge sharing and raising awareness of the subject. The Group's network also fosters links between the various fields of speech and hearing to facilitate collaboration (as illustrated below).



For more information about the Speech and Hearing Group, and becoming an IOA member, visit: [www.ioa.org.uk](http://www.ioa.org.uk) or contact [judy.edrich@ioa.org.uk](mailto:judy.edrich@ioa.org.uk)



## St Mary's Audiology Department

St Mary's has an Audiology Department, staffed by a qualified Teacher of Hearing Impaired Children. It is fully equipped to carry out testing and assessment procedures, and to maintain and monitor the use of a range of audiological equipment including personal hearing aids, cochlear implants, radio aids and Soundfield Systems. The philosophy and practice of the department rests in the belief that it is essential that all hearing impaired pupils have the opportunity to make best possible use of their residual hearing at all times and in all situations.

All hearing impaired pupils attending St Mary's have a full audiological screening assessment annually. Other children may be referred by staff for a full assessment if required. Daily checks take place and problems dealt with as they arise. There are regular checks of hearing aid performance, ear mould fit and middle ear function. Where necessary, hearing impaired pupils are given additional support by the specialist teacher, either within the classroom, in a small group, or on an individual basis.

Speech & Hearing Group at St Mary's School



Main hall with 'tack board' ceiling panels

One-to-one Art therapy space



HT introduces the pool hall



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## KEY FINDINGS

### Key findings from the acousticians' study day of the integrated learning environment of St Mary's School and College:

St Mary's caters for up to 144 pupils aged 7-19 in day and residential provision sharing a range of speech and hearing difficulties. They are supported by 185 full time and 60 part time staff. Why so many?

- Over 40% of pupils with hearing impairment have additional needs.
- Overlaid on the S&H difficulties are a range of conditions from the wider special-needs spectrum including secondary physical difficulties, learning, social, communication and/or emotional difficulties.
- In the Autistic Spectrum (ASD), particular distractions can cause a mismatch between presented and received information.

### Further (10) lessons learned from St Mary's include that:

- Auditory perception and speech recognition (discrimination) are not the same.
- Use of Sound Field Systems is very successfully received. But this is a qualified success enabled by continuing engagement of informed and interested senior audiology staff that regularly monitor standards and performance.
- Optimum strategic relationships in terms of space configuration are used as the foundation for effective provision.
- Application of 'new' classroom equipment is embraced, but practical use can tell a different story eg. Adjustment mechanism for headphones, use of Powerpoint in Deaf Awareness Training causing teacher to face the board i.e. away from pupils.
- Two-way communication with manufacturers of equipment pays dividends.
- Management is receptive and prepared to discuss and try new ideas.
- Cross-departmental meetings pay dividends in terms of benefits for teaching and learning.
- Continuity in engagement over (15) evolutionary years has sensitised architects to appropriate and proven acoustic method and vocabulary.
- Effective policy and practice in management of occupants and space is key
- Highly developed use of passive management techniques such as 'Quiet Zones' supplemented by proactive pastoral intervention form the foundation to the management of Noise.

Successful acoustic environments for special needs require dedicated application of multi-faceted and multi-disciplinary expertise. This integrated approach cultivates an enhanced and dynamic environment which is both receptive and responsive. It enables optimum support to the range of need across the learning and teaching continuum including in the wider community of the school.

## SUMMARY

Helen Nichols  
Dipl Arch RIBA FRSA MIOA APMP

STEM ambassador  
CIC accredited DQI facilitator  
Director,  
Effective Learning Environments (ELE) Ltd  
2 The Meadow, Chelsfield Park,  
Kent, UK. BR6 6HH

- Helen's professional background covers more than 25 years experience of physical environments for education. This has included:
  - From 1991-1999 with the (then) DIES studying and evaluating age-appropriate and needs-related physical environments for learning.
  - Focus on EY, Primary and SEN including the outdoor classroom.
  - Appreciation of processes supporting organisation and management of learning and teaching and related services in schools.
  - Investigation of work of Pathfinder Authorities into accommodation implications of National Grid for Learning.
  - Territorial architect contributing to scrutiny of Statutory Approvals and evaluation of value for money in VA schools' capital proposals.
  - Interpretation and translation of policy into standards of accommodation for learning and teaching in primary and secondary schools including BB86, informing update of BB51, 87, 93, 98, pioneering briefing work to inform BB 102
  - Pioneering national initiatives in Early Years, Sure Start (EYCU) Accessible Schools and the Academies programme.
  - Investigation of forward looking policies for Schools of the Future / 21st century schools; including extended schools, out of school hours/term time, outward-facing & community use of schools, provision for early years, multi-agency and inclusion, pioneering co-location of Special Needs, and a published case study of 21 Century Outdoor Learning (2009).
  - With (former) HMI and technical team: national study of accommodation for music in primary and secondary schools.

In 1999 Helen founded the independent design consultancy for education  
Effective Learning Environments (ELE) Ltd where she is responsible for:

- Client Contact & Professional Relations
- Business Development
- Scoping & monitoring cost-efficiency of work
- Developing and maintaining relationships with client procurement teams
- Representing and promoting company to national agencies and sponsors
- Management and career development of staff and senior team

Between 2006-2009 Helen was an invited member of the IOA national Speech & Hearing Committee helping to shape and deliver the conference on S&H in learning environments (London, Royal Society January 2008). In June 2008 Helen was elected a corporate member of IOA, and in February 2009 an Acoustic Ambassador as part of the UK government DTI funded STEM (Science Technology, Engineering or Maths) initiative.

Inspection report: St Mary's School, 13 November 2008 4 of 13

### Overall effectiveness of the school Grade: 1

This is an outstanding school. The principal and dedicated staff team refuse to accept learners' disabilities as a barrier to learning. They work ceaselessly to ensure outstanding resources such as modified furniture, tools and high quality electronic communication aids, are accessible to all learners so that they can access the rich curriculum provided and excel as learners. Consequently, student achievement, particularly in communication and independent mobility, is outstanding.

Curriculum planning provides an opportunity for each student to 'reach for the sky' and achieve challenging targets. Parents are delighted with what the trust achieves for their children ... Achievement in English, mathematics and science is outstanding. Teaching is outstanding; it engages all learners and accelerates their learning. Learners become confident and secure very quickly in this supportive school. They make rapid gains as independent learners. Their work-related skills are particularly well developed.

## The Intelligibility & Quality of Speech in Noise

7-8 January 2010

University of Amsterdam (AMS)

Poster by Helen Nichols ELE

[helen.nichols@eleuk.com](mailto:helen.nichols@eleuk.com)

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Some recent projects ...

**early years**  
CABE / DIES - Neighbourhood Nurseries design competition. Commended finalist (with Anzotype and Wendy Toman Associates) Sheffield (2001)

**primary**  
DIES (Sure Start Unit) - Early Excellence Centre national programme. Design advice on integrated provision (2002-04)

**secondary**  
DIES (Childcare Unit): National investigations for publication on design of accommodation for out-of-school-hours and holiday care on school sites (1999-2000)

**Richmond schools PFI**: Briefing, consultation and design advice to Carlton for seven new and adapted primary schools with early years and community provision (2001)

**secondary**  
DIES (Academies Division) - Academies programme. Design services to enable inclusive environments for pupils and adults with physical and special educational needs, including outline design briefs and design strategies for eight academy projects (2002-present)

**East Sussex LEA**: Brief & Strategic design inclusive provision for SLD/MLD students at an existing comprehensive school, Dover (2001-02)

**further / adult education**  
East Sussex LEA: Briefing, design and costing services and DIES prescribed information for post-16 facilities for SLD/MLD students in new inclusive college at Bexhill (2001)

**special educational needs**  
DIES - PFI Toolkit: Research for DIES (SDOU & SEND) on area and cost indices for special schools (2002)

**DIES - SEN and Disability Act 2001**: Advice on physical environments for the government circular, 'Accessible Schools' (2002)

**Ealing LEA**: Outline brief, design and costing for a replacement SLD (with ASD) special school (£5.15m, 2002)

**Harrow PFI**: Design advice on SLD special school co-location with mainstream primary and middle school, with new integrated Foundation Stage, Harrow (2001) and work on B&D proposals (2002)

**residential**  
The New School at West Heath, Sevenoaks: Advice to an independent BESD all-age residential school on plans for major alterations and enlargement (2001)

**all-age extended school**  
CEA/Basingstoke: Co-location of ASD / SLD and mainstream schools, including Sure Start, multi-agency, out-of-school-hours, training/conference, residential, youth and community leisure facilities to RIBA Stage C (with Curt La Tourelle Architects. £12.8m, 2001)

**Somerset LEA**: County-wide accommodation standard for primary, secondary and post-16 resourced specialist provision for pupils with severe and complex needs; strategic capital costings for implementation (£9.9m); feasibility studies for sites in Taunton (£0.75-3.0m), Street (£2.0-9.2m) and Bridgwater (£1.5-5.1m) (2004)

**West London Academy, Ealing**: Outline brief and costing for PFI special school integrated with academy (£5.0m, 2002), advice on new special, primary and secondary schools, nursery, Sure Start unit, adult and community education, sports and outdoor play facilities with Foster & Partners (2003)

**What people say about ele ...**  
"I would want to record appreciation of ele's work... You met the timescales and demanding tasks and provided readable and user-friendly reports that have expanded our knowledge and understanding... Your attention to detail, method of engagement with Heads etc and knowledge of the issues at stake confirm what a highly professional and organised service you are and provide."  
Mike Ellis, Deputy Group Manager SEN, Somerset County Council

"I just wanted to say thank you for your help in preparing the plans and drawings to create something so innovative and exciting for the children and families of the elite."  
Kate Saunders, Project Manager, Sure Start South Horsham

"Thank you for your extremely valuable and whole-hearted support to our work... Your contribution was much appreciated and received numerous compliments from our partners and the elite elite."  
John Wainwright, Development Director, Carlton Private Finance



**ele effective learning environments**  
ele's multidisciplinary team

Helen Nichols  
Robin Bishop  
Chris Marshall  
Bill Bakehouse  
Merton Dowling  
Graig Kenny  
Terry Nichols

offers a wide range of services for:  
Site & Building Appraisal  
Briefing  
Standards Development  
Strategic Design  
Feasibility Studies  
Strategic Cost Planning  
User Consultation  
Compliance & Design Reviews

to clients, consultants and stakeholders

DIES & Central Government  
Local Education Authorities  
Nurseries, Schools & Colleges  
Sponsors and Project Managers  
Architects & Design Teams  
Facilities Managers  
Contractors & Consortia  
Community Groups

involved in procurement of new or improved accommodation

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Acoustics - Sensory  
Environments - Foundation  
Stage Units - Children's Centres - Sure Start  
Neighbourhood Nurseries  
Early Excellence Centres - Extended Schools - Centres of Excellence  
Academies - Post-16s  
Further Education  
Re-organisation - Environmental Quality - Multi-Agency Centres  
Integrated Services - Co-location  
Family Support - Community Learning Resources  
Centres - Foundation Stage Units  
Integrated Services - Family Learning - Funding  
Cost-Planning - Best Value  
Value for Money - Procurement  
Adult Education - Training  
Programme - Specification  
Construction - PFI - Innovation  
Partnership - Holistic Solutions

### St Mary's is a special school that provides for this particular need:

- Autistic Spectrum of Difficulties
- Hearing Impairment (HI)
- Visual Impairment (VI)
- Physical Disabilities
- Dyslexia or Specific Learning Difficulties (SpLD)
- Moderate Learning Difficulties (MLD)
- Language and Communication Disorders
- Aspergers Syndrome
- Delicate/Medical Conditions
- Epilepsy
- Dual/Multi-Sensory Impairment (DSI/MSI)

St Mary's is more than just a place where young people come to receive their schooling. The trust employs up to 30 therapists including Speech and Language Therapists, Occupational Therapists, Physiotherapists, an Art Therapist and a Counselling Psychologist. In addition to their 'normal' training, the therapists also offer specialist help with sensory integration, augmentative communication aids, hydrotherapy, eating and swallowing disorders, dyslexia, signing and much more. St Mary's is a very special place.

**Age range:** 7 - 19  
**Day pupils:** 16 boys and 8 girls  
**Weekly boarding pupils:** 39 boys and 18 girls  
**Full boarding pupils:** 35 boys and 20 girls (The school offers flexi-boarding).  
**TOTAL PUPILS:** 90 boys and 46 girls, including 37 boys and 25 girls in the 6th form  
**Staff numbers:** 185 full time and 60 part time

## History of St Mary's School & College



To understand, and appreciate the quality of St Mary's School, it is necessary to look back over many years to its origin. Founded in 1922, by Miss Annie Margaret Sarson, Miss Beatrice Oughton-Giles and Miss Kathleen Sarson.

Miss Annie Sarson was born in Dover, in 1890, the youngest of six children. She was a medical gymnast and a member of the Royal College of Physiotherapists as well as being an outstanding teacher. She and her sister, Kathleen, practiced together as Physiotherapists in Bourne-mouth, before returning to London where, by a chance reply to an advertisement, they met Miss Oughton-Giles who was then a hospital matron and also a qualified Physiotherapist. Beatrice Oughton-Giles was born in Edinburgh and commenced her nursing training at Guy's Hospital. She spent time in Germany, nursing with a religious order, and later trained as a Physiotherapist at Guy's Hospital and became a Fellow of the Chartered Society of Physiotherapists. She became Sister in Charge at the Hospital for Nervous Diseases; through her advertisement for a Physiotherapist to lecture her nurses she met up with the two Sarson sisters.



A life-long partnership began, and their common dream of starting a special school became a reality in 1922. The first St Mary's was in a Georgian house in Chislehurst, Kent. The children at first attended a nearby school for lessons and returned 'home' for treatment and exercises; but by 1939 there were now 13 children and huts were erected in the garden for classrooms. Now it could be readily described as a school. By 1939 the school had grown so much that a new, larger property was

purchased in Horam, Sussex. Following the declaration of war an air-raid shelter was built in the grounds, gas masks were issued and children took part in air-raid drill and black-outs. Refugee children, fleeing from Nazi Germany, were brought to Horam during the period of the 'phoney war', as well as evacuees from London, and when war began in earnest the whole school was evacuated, in 1940, to a country estate at Llwyn Madoc, in Wales.

On the return to Horam at the end of the war, in 1945, they found the house in a terrible state, and in 1946, the two Principals came to Bexhill, to look for a suitable property, and had to choose between a property in Hastings Road, which later became Charters Towers, and a large house in Wrestwood Road, with extensive grounds which contained two follies, a Japanese garden with a pond and a pagoda, woodlands and lawns, greenhouses and a huge kitchen garden. It was to this house that the school moved, during the Summer holidays, in 1946.



In 1960, Miss Jane Shaw, a qualified nurse at Guy's Hospital and the Hospital for Sick Children at Great Ormond Street, who had many years experience looking after disabled children, joined the school. Miss Shaw became Head Matron, and in 1972 became Principal. Her aim was to continue in the tradition of the co-founders, to maintain an independent residential school for 90 boys and girls who really needed the special care and education that the school offered; in April 1991, Miss Shaw (now Mrs Crabbe) retired. The new Principal, David Cassar, previously the Principal of a boarding special school in Hertfordshire, aimed to continue to foster a spirit of self-reliance and independence and a desire

Since the arrival of Mr Cassar, St Mary's has grown enormously. Many new buildings have been erected on site and property off site has also been purchased. The land adjacent to the school, which belonged to the Water Board, was purchased and is now used by our large 6th Form which started in September 1999. Mr Cassar successfully changed the school from its independent status to that of a 'non-maintained special school' and in 2002 the 'educational' trust became a 'children's' trust.

St Mary's is not just a school. It is a Children's Trust where children receive first class therapy, nursing, care and education. At St Mary's well over 200 staff work for the benefit of the children. The Trust employs Teachers, Carers, Nurses, Speech and Language Therapists, Occupational Therapists, Physiotherapists, a Social Worker, an Art Psychotherapist, a Counselling Psychologist, family advocates, Teachers for the Hearing Impaired and Specific Learning Difficulties, all supported by our own Administration, Catering and Site Management staff.

St Mary's educates and cares for up to 144 students between the ages of 7 and 19 years, sharing with parents the responsibility of preparing them to become as independent as possible, ready to realise their full potential. St Mary's is a children's charity and as such receives no grants or donations from Local Government and only minimal funding from Central Government. Parents do not normally pay fees for their child attending St Mary's. Local Authorities who cannot meet the needs of a child will refer that child to St Mary's, and if, after assessment, we believe the child would be appropriately placed the local authority will then pay an appropriate fee.