The innovative facilities at City University London’s Saad Centre for Radiography have opened up new ways of teaching and learning, helping to place City among the leaders in radiography education and research.

There are seven specialised rooms in the Centre, each with state-of-the-art equipment. This advanced technology is available not only to our students, but also to other users for activities and projects that might be far removed from its more obvious clinical applications.

The Fluoroscopy, X-Ray and Agfa CR System suite consists of two spacious rooms, one a fully equipped screening area with fluoroscopy and X-ray equipment, the other an adjacent protected control room with an observation port and an Agfa CR System. There are viewing monitors in both areas. Mainly used by City’s radiography students to provide practical teaching and hands on experience in a simulated clinical environment, these areas can hold 12 to 15 participants. This calm and efficient facility, away from the constraints of a busy clinical department, is also available for use throughout the year with the support of our academic staff. This provides an exceptional opportunity in the centre of London for those not connected to the University or the field of diagnostic imaging to take advantage of the technology.

Within the screening area, the fixed fluoroscopy unit takes and displays (on both monitors) dynamic X-ray images of the patient or object. They can be moved, rotated or repositioned as required, for example, observing the movement of the knee or elbow joints. The images display not only anatomy but also physiology and are typically used to show the path of barium or iodine contrast media through the body for diagnostic purposes.

The Siemens Sireskop CX unit has an under table x-ray tube and an overcouch Image Intensifier mounted on a floor stand providing freedom of movement along the table axis. The table is motorised and adjustable, and gives easy access from all positions. It can tilt from vertical to horizontal plus a further fifteen degrees down to mimic the Trendelenburg position. The image intensifier produces active images directly to the two monitors, which capture dynamic digital images of system processes using a contrast medium such as barium. The screening area is equipped with both a built-in table bucky and a free-standing bucky, as well as a mobile patient trolley and hand washing facilities. As well as providing practical teaching facilities for our radiography programmes, this area is used to teach manual handling (e.g. transferring patients from a trolley to the table) and for other topics such as CPR, hygiene and infection control.
In the adjacent control area there is a directly linked control monitor, a modern Agfa CR (Computed Radiography) system with its own monitor, plus a separate PC with network and broadband access. This room is used both as the control area for the fluoroscopy and X-ray equipment and to teach the use of the CR reader, on which to view, manipulate and interpret images. It has the ability to transfer and record images onto CD with its own DICOM viewer.

As well as its main function to facilitate the training of radiography students, the suite can be used for other purposes. Short courses, Continuing Professional Development (CPD) programmes, skills training, research and commercial activities can be carried out within the suite and the other facilities available within the Saad Centre. Other potential applications for moving X-ray images include the exploration of internal structures and behaviour of objects, enabled by the ability to rotate or manipulate the images in real time. For example, images of an archaeological item exploring the interior contents could be moved manually whilst being screened to obtain a different or more revealing aspect. One alternative teaching application with the fluoroscopy unit is the module for Undergraduate Biomedical Engineers in our School of Engineering who value its potential with regard to Quality Assurance.
Specifications

Screening area

Fluoroscopy unit with the following specifications and benefits:

• Image Intensifier Siemens Sireskop CX Radiography/Fluoroscopy System
• Image Intensifier nominal diameter 23 cm and a zoom function (17 cm) for improved detail recognition
• Includes a function to use CR plates within the spot-imaging device that is associated with the image intensifier – images can be downloaded onto CD and the plate can be segmented to produce multiple images per plate
• Post-processing facilities include noise suppression and edge enhancement
• Real-time imaging including motion and ability to view and record the data as either moving or still images
• Software to change moving-image parameters for optimum imaging conditions
• Image-manipulation software to change contrast or density
• Last-image hold and screen-capture function
• Ceiling suspended, free-floating, X-ray tube, with digital-imaging CR cassette, enabling cross-table images to be acquired
• Fluoroscopy Table with incorporated table bucky
• Motorised, tilting and fully adjustable patient couch, able to move to vertical position
• Erect bucky
• A mobile patient trolley
• Full range of protective equipment, lead-lined curtaining and Kenex Lead Gowns and gloves for protective shielding during screening procedures.

Control Room

• Separate and fully protected, with viewing monitor and lead-screened observation window
• Agfa Computed Radiography (CR) System and monitor, with Agfa QA and ID viewing software
• CR reader to display on-monitor X-ray images from a digital cassette
• Modify/increase contrast, brightness or density
• Inversion of grey scale
• Image magnification or reduction
• Frame or exclude image areas using borders and shutters
• Quantify distances or angles using a measurement bar
• Notation facility
• Image inversion, left to right, top to bottom and 360 degrees rotation
• Image data storage on system database or CDs with software for viewing and image manipulation - these CDs can then be viewed in our Digital Imaging room
• CR digital cassette for image capture in two sizes, 35x43 cm and 24x30 cm
• Stand-alone PC with internet access.
You'll find the cost of using the Fluoroscopy room on the separate Price List.

For more information about our facilities and to discuss how you could benefit from using the Fluoroscopy room at the Saad Centre, please contact:

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