CASE STUDY

NEW ROYAL ADELAIDE HOSPITAL (nRAH)

Client:
New Royal Adelaide Hospital (nRAH) in partnership with Spotless.

Project:
Managing 14 FM services, in soon to be Australia's largest, busiest and most technologically advanced hospital, supported by a best-of-breed technology solution, including robotics and specialised software to ensure efficient service provision, seamlessly coordinated through QFM's centralised helpdesk solution.

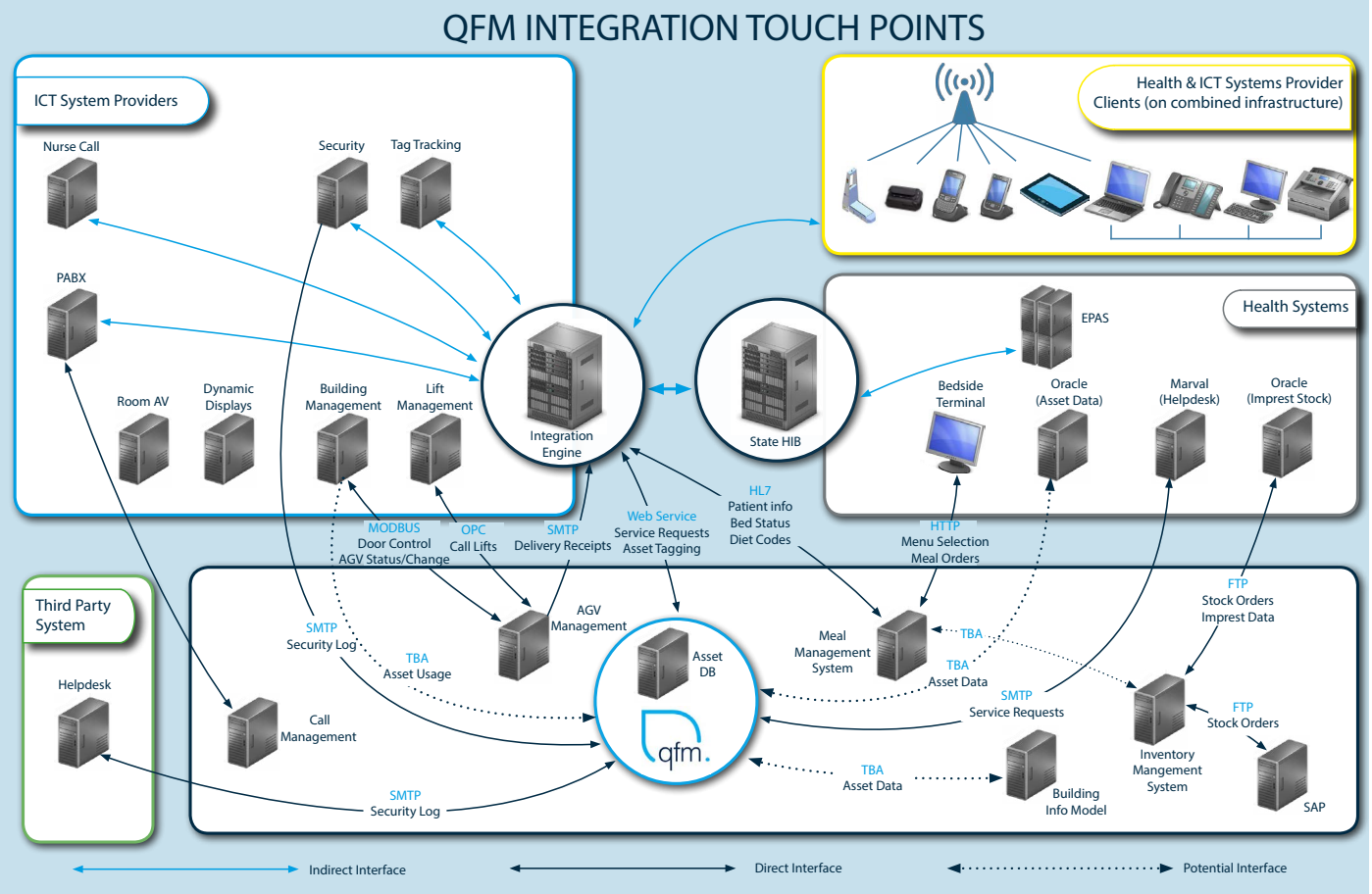
The Challenge

When completed in 2016, the nRAH will be the largest, busiest and most technologically advanced hospital in Australia with 800 single in-patient rooms, including 100 same-day beds and 80,000 same-day and overnight patient admissions per year. Leading Australian service provider, Spotless, will undertake responsibility for facilities management at the hospital, under a Public Private Partnership (PPP) agreement with the South Australian Government.

Managing services within a hospital building that spans the length of three city blocks and the width of two (totalling 180,000 square metres) inevitably brings logistical challenges that are comparable with running a self-contained city. Spotless will deliver a total of 14 facilities management services once the hospital is operational, including critical support services that are integrated to support the State's model of care. These services will be delivered around the clock by more than 500 full-time equivalent Spotless staff.

The Technology Solution

Spotless' managed non-clinical services will be key to the daily operations of South Australia's largest hospital. The organisation will have key responsibilities for achieving food safety, patient satisfaction and other general compliances within the hospital. In order to support this, Spotless have implemented a best-of-breed technology solution which includes robotics and specialised software to ensure efficient service provision, seamlessly coordinated through a centralised helpdesk solution.



System Overview

The helpdesk solution provides Spotless and the facilities team with direct access to skilled personnel who deploy resources in an accurate and timely manner, in order to respond to and rectify issues and provide the services for the nRAH. It is a single point for recording, actioning, communicating and reporting service requests.

The helpdesk operates 24 / 7 and is permanently staffed to ensure that it remains fully responsive to service requirements, including meeting all requests within the response and rectification completion times, as specified in the PPP contract. It deals with all FM services including security by providing co-ordination and updates of activities. The helpdesk supports the Model of Care, by relieving clinical staff of supervisory and follow up duties beyond the initial reporting of a service request; ensuring they are able to maximise their time spent providing clinical care. In many cases, the helpdesk will be advised of requests electronically, via integration with systems including nRAH's Building Management System (BMS) or the Nurse Call system. This enables the service request to be automatically issued and rectified, before clinical staff are aware of an issue.

FM Software

QFM facilities management software from Service Works is used to record and manage all service requests. The system provides real-time, detailed management reporting, and notably incorporates a PPP Payment Mechanism module, providing a seamless link between normal helpdesk operations and the requirement for fully audited performance metrics inherent in PPP projects.

QFM controls a broad range of business activities at nRAH, including:

- Helpdesk management and service requests
- Reactive maintenance management
- Asset management
- Service management and service schedules
- PPP payment mechanism management and reporting

Integration Engine

Integration between QFM and many other systems is achieved via an Integration Engine (IE). This is the primary conduit of information to and from nRAH's ICT provider systems and all other systems. It also manages the allocation of tasks to Spotless' operatives throughout the hospital. As electronic service requests are received via the ICT systems, they are transmitted to QFM which prioritises and tracks the performance in delivering the service.

Building Management System

The Building Management System (BMS) monitors all equipment within the nRAH facility and is interfaced into QFM to automate service requests. The BMS will raise an alert when a maintenance activity is required (e.g. if a device is malfunctioning, or a component has exceeded an operational limit such as run hours). This request is sent via the Integration Engine to QFM to raise the service request for prioritisation and monitoring.

Nurse Call

A nurse call panel is located in each patient room. These panels provide a status display for the room and buttons for patients to use to request assistance. These requests are monitored and managed by the nurse call system. If a request is made via the panel for example, to clean the room, then a signal is sent via the Integration Engine to QFM software to raise a service request.

If a request to clean the room is made via the helpdesk, then QFM will additionally notify the nurse call system that a clean inpatient room request is pending for the nominated room. This signal is sent from QFM via the Integration Engine onto the nurse call system.

Security

The security system, while working autonomously for its prime functions, also integrates with QFM to provide the logging of service requests, the prioritisation of the request, and the subsequent monitoring. Numerous types of jobs can be raised; from access card issues through to the removal of unauthorised vehicles.

Tag Tracking

The tag tracking system provides active monitoring of RFID (radio-frequency identification) tags used throughout the facility for monitoring patient and asset locations. Since QFM is used for asset management, it provides the ability to tag an asset with its assigned RFID. During the asset tagging process, the identity and details of the asset are sent from QFM via the Integration Engine to the tag tracking system.

HEALTH SYSTEMS

State HIB

The State of South Australia's Health Information Broker (HIB) provides a central interface between the health systems and all other systems. Its role is to package up all information transfer between the systems (as outlined below) into a centrally managed interface.

Patient Administration

The State's new patient administration system will provide the foundation for delivering South Australia's State-wide electronic health record. It will transform the model of care by providing health care professionals and administrative clinical staff with real-time access to comprehensive patient information at the point of care. The type of information available includes details of a patient's treatment plan, their test results and information about medications they may be taking. The integration with QFM enables the raising of service requests upon the movement of patients, admissions, and discharges, for services including cleaning of rooms, orderly assistance, and equipment requests.

IT Helpdesk System

Whilst QFM is used to manage all service and failure events for the purpose of response and reporting, some events will fall outside of Spotless' service responsibilities and need to be triaged to the state. The Health ICT team within the South Australian government use a specialised IT helpdesk system to manage service requests. If the Spotless helpdesk determines that a service event should be managed by the State, it notifies the State's Service Desk of the job details. The notification includes the QFM reference number, category and type, plus the name of the person who raised it.

Active Directory & Infrastructure Services

QFM provides an intrinsic Active Directory mode that allows pre-authentication of the current Windows users without the need to challenge the user for a security token. It also synchronises user and personnel tables with selected data within Active Directory, to ensure complete data security. The synchronisation is one way, with Active Directory being the source and QFM being the destination.

SPOTLESS SYSTEMS

➤ Call Management System

Once fully live, all Contact Centre and voicemail functionality will be running on a call management system. When a helpdesk-bound voice call is received on the telephone system, it will notify the call management system before ringing the next available agent's handset. Spotless helpdesk will either use a desktop version of the call management application as a shortcut to connect to the main server or will access the system locally via client-facing software to enable these queued calls.

➤ Meal Management System

The meal management system, in conjunction with the automated guided vehicles (AGV) and the patient support service assistants (PSSA), will allow Spotless to deliver a broad array of catering services including participation in the food safety program, patient catering services, grocery services and meal management.

All meals will be ordered either by the patient (perhaps with assistance), through a bedside terminal. Menu selections will be collated and appropriate meals produced in advance of service, in-house. These meals will be transported in trolleys, via the hospital's AGV system, to the required floors, for distribution by a PSSA. Integration with QFM will ensure that the correct meal is delivered to the right location in the building.

➤ Automated Guided Vehicle Management System

The automated guided vehicles (AGV) will enable Spotless to deliver many of the agreed FM services through the physical transportation of goods within nRAH. The AGVs will be used as a primary means of transport, freeing resources for improved assistance with patient support services.

Meals, linen, bulk stores, pharmacy and waste management will all be transported between the source and each collection point automatically. Arrival notifications come from the AGV system through the Integration engine to QFM, which automatically sends a request for a PSSA to collect the goods.

In many instances, the AGV collection will be a bi-directional process. Fresh meals and clean linen trolleys delivery missions will in turn then return with a completed meals and spoiled / dirty linen trolley mission. Waste will be collected and empty receptacles will be returned.

➤ Inventory Management System

The Inventory Management System (IMS) will support the bulk stores distribution service, in addition to supporting linen distribution and medical gas services.

The bulk stores service will provide for the procurement of all consumables and be managed through the State's health procurement and supply chain arrangements which incorporate an integrated IT system. This system will manage ordering and be able to track items through every stage of the supply chain to the point of delivery to the end user.

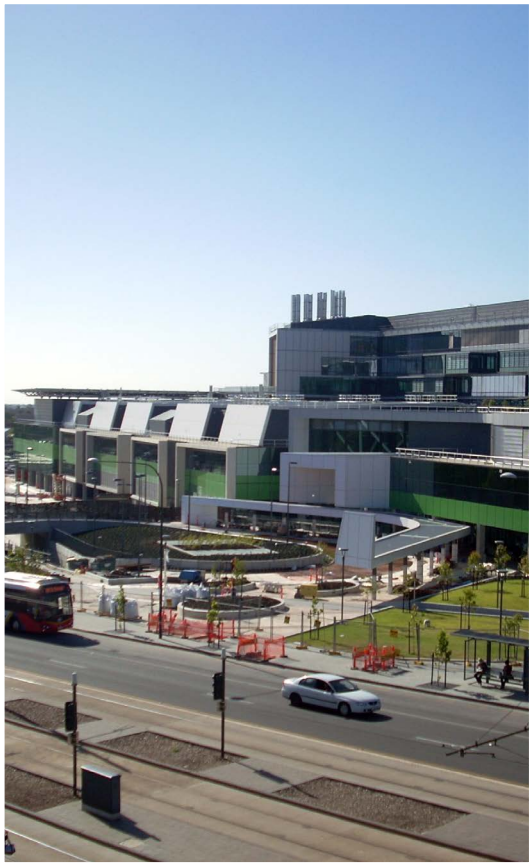
All supplies will be received through the loading dock and then internally distributed through the logistics system direct to point-of-use. The supply chain will be monitored and managed using a just-in-time philosophy to achieve an optimum balance between the amount of storage space required and the frequency of deliveries.

Delivery times to and within the nRAH facility will be coordinated and scheduled to meet clinical operational needs. In addition, medical gas deliveries will be transferred and stored in a secure holding area.

Spotless is currently exploring the possibility of integrating QFM with the IMS, to streamline the management of planned and reactive maintenance activities which require parts to be ordered and supplied by the IMS.

Looking Ahead

Prior to the nRAH project completion in 2016, a number of other possible interfaces are also being considered to further streamline operational management of the facility. These may include:



➤ Dynamic Displays

A number of dynamic displays will be located throughout the hospital to provide dynamic signage, event information, and wayfinding kiosks. The dynamic display system monitors and manages these displays and it is currently being assessed whether this should interface to the FM system, to provide room booking information on the display devices.

➤ Room AV

The Room AV system at nRAH includes touch screen panels on meeting rooms that allow user lookup and booking of rooms. In the future, this may be interfaced to the FM application to ensure both the AV system and FM software have the same view of current room bookings.

- Room booking interface to AV system and / or Public Information Display system
- Catering interface for meeting room catering request failures