WHERE THE ……. HELL ARE WE (FINDING A WAY TO WAYFIND)

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About the Author:

Greg Truscott has a degree in Architecture and obtained registration as an Architect in 1991. He completed a Diploma in Management in 2013. The first 10 years of his working life was for private Architectural firms in Western Australia and Toronto, Canada. Projects he worked on included Office towers, retail complexes, University buildings, a Hotel and large upmarket homes. In 1993 he commenced working in the Health Capital Works arena and has been captivated by it ever since. His latest roles have included the Manager, Major Capital Works, SMHS (half of Perth Metropolitan area's health system) and currently Manager, Infrastructure and New Works, RBA Zone.

1. ABSTRACT:

This is a case study of a project I am carrying out at Royal Perth Hospital (RPH) to improve its wayfinding and signage system.

Although the existing wayfinding system had been developed with great consideration and a very comprehensive system installed 15 years ago, I assessed much of it was flawed.

The opening of the new $1.8 Billion Fiona Stanley Hospital in 2014, triggered the planned downsizing and reconfiguration of RPH. A budget was provided to deal with the resultant signage changes. Fortunately it was a budget generous enough, for me to embark on reworking the whole strategy and presentation of the RPH wayfinding and signage system.

This paper will describe the existing system, identify the problems it has and show how the proposed new system addresses those problems and improves the system.

The project also includes the installation of interactive digital wayfinding touch screens, a first for the hospital. That component along with other building fabric strategies will be presented in the second part of this paper.

Wayfinding can be a difficult task and although you may not agree with everything I present in this paper, I hope it will, at least highlight the strategies and issues that must be considered to ultimately create a good wayfinding and signage system.

2. INTRODUCTION:

What is wayfinding ? Wayfinding, is knowing where you want to go, where you are, determining the best route, staying on that route and recognising you have arrived at your destination [1].

Why is it important ? Good wayfinding will save hospitals money by reducing the time staff loses directing people. It will also reduce the incidence of patients arriving late for clinics and as a result being frustrated, stressed and even aggressive toward staff.

3. WHY WAS THIS PROJECT UNDERTAKEN AT RPH:

Soon after commencing employment at RPH, I had many experiences which proved to me that the wayfinding and signage system had serious shortcomings.

The first was when using the Main Directory board to find the location of Ward 5H. The board started by listing all the entities in building Block 1, followed by the same in Block 2 and so on. Ward 5H happens to be in Block 12 (out of a total of 20 on site) Even though after about Block 3 I had recognised picked up the entities were listed alphabetically within each Block, I still had 9 buildings to look through to find Ward 5H. To me this was counter-intuitive. It is far better to list in alphabetical order all the entities in the Hospital and include in the listing, their location. The user would go straight to “W” and find Ward 5H quickly. I simplified this further, which shall be explained later.

The second incident occurred when I was waiting for a lift. A lady, who appeared to have all her faculties functioning, asked me “are these the brown lifts”. *Figure 1* shows what we were both looking at. It was not surprising she asked given the dark brown vinyl strip on the blue doors was the only clue. *Figure 2* shows the alterations we made to improve that aspect of wayfinding. This included the obvious “Brown Lifts” sign (note also, words help those with colour blindness) and painting the whole door in a more eye catching shade of brown. The removal of all surplus and non-essential information on the walls and removing the large lift numbers, which are irrelevant to users (reduced to a small tag on the door frame) also had a very positive impact. More will be said on “de-cluttering”, later.

Figure 1 - The Brown Lifts (before)

Figure 2 - The Brown Lifts (after)

While on the subject of “brown”, I can recommend, not trying to use it as an “eye catching” colour. The hospital has 7 banks of lifts and colours are used as their identifiers. The primary colours red, yellow, blue and secondary colours, green, purple and orange are unambiguous when referred to and have strong eye-catching accent shades which can be employed. Those 6 colours work perfectly, but selecting colours beyond them can be challenging. Black and grey are clear enough, but “take the black lifts” sounds foreboding and white is not an accent colour. There are other colour related problems within the signage system, which will be detailed later.

Finally an incident occurred, when I was putting this paper together, to present at the IHEA 2015 National Conference. My presentation was going to include, enacting a journey through the hospital using images of the existing wayfinding and signage elements alternating with images of the new improved system which will replace it. I careful selected the destination of the “Department of Otolaryngology” because the journey to it was ideal to demonstrate the many things which were wrong with the existing system. (Note: the first fault is listing it under “D” for Department instead of “O”. Other similar examples on the existing Directory are Centre for Musculoskeletal Studies under “C”, Division of Imaging Services and Division of Surgery both under “D”. This practise is not user friendly). I needed to be able to pronounce Otolaryngology correctly in my presentation, so went up to the Department and showed the receptionist the title. The perplexed receptionist said I was in the Ear Nose and Throat Clinic and it took a clinical person to explain, I was in the right area and to provide the correct pronunciation. This may be an isolated event but consider the trouble someone with limited English language skills would have in this situation. There is a push to use plain English where possible for complex medical terminology. The Queensland Health Wayfinding Guidelines [2] for example, suggests “Heart scans” instead of “Angiography”, “Brain health” instead of “Neurology”, “Breast screening” instead of “Mammography”, “Cancer care” instead of “Oncology”, plus many more. In a major Tertiary Hospital with clinical entities listed together alphabetically as I have recommended, it may we show Ophthalmology, Orthodontics, Otolaryngology, Orthopaedics and Orthotics. It would not be surprising if our patient got his eyes checked instead of arriving at Otolaryngology.

4. WHAT WAS WRONG WITH THE EXISTING SYSTEM AND WHAT DID WE DO TO FIX IT:

RPH is the first hospital constructed in Perth in 1829. It is in the centre of the City had 720 beds at its peak. The buildings on this ever expanding site were constructed over a period of 160 years with the last major addition completed in 1988. *Figure 3* shows the complex of buildings of widely disparate ages which are interconnected at multiple levels and over major roads. This complex presents a very difficult wayfinding challenge.

Figure 3 - RPH Circa 1997

The existing wayfinding system was put together in great detail. A committee consisting of Clinical Directors, the Director of Facilities Management, staff in other support areas and consumer and disability representatives lead the project. They were supported by a full time in-house project manager, a wayfinding specialist and a signage and graphics consultant. The outcome was a 60 page RPH signage style manual, and the approved system was installed in 2001/02.

The committee was very thorough and had the best intentions. It could be said the failings were in fact, due to, trying too hard. Their approach was to name, label and colour everything and then too display the maximum amount of information as often as possible i.e. the more the better.

I quickly came to the view that some of the labelling and most of the subtle clues (particularly colours) would not be appreciated by the users, either because it is not obvious, explained or because most people can't retain more than 2 or 3 pieces of wayfinding information at once. The result is they are overwhelmed. I will use the term "noise" to describe all this information people sense may have a meaning, but they haven't understood it, or retained it. Also the strategy of repeating signs at every junction, while it meant well, serves to make people totally depended on it, starts to become visual pollution and adds, what I will term "clutter".

I will go through each of the elements of wayfinding, describing the existing and its problems and present the proposed system which addresses those problems. We shall commence with the already mentioned Main Directory board.

4.1 Main Directory boards:

Apart from the issue of the counter-intuitive arrangement which has already been discussed the existing Main Directory Board had these problems:

4.1.1 <u>It has too much information (i.e. “clutter”).</u>
There are 252 entities listed. Consider for a moment how many people would need to find: Anatomical Pathology (Mortuary); Central Plating and Distribution Area *(i.e. this is where patients meals are plated up)*; Switch Board *(i.e. the main telephone receptionist)*; Research Ethics and Governance; Clinical Services Outpatient Reform and there are many more. *Figure 4* shows part of the existing Main Directory.

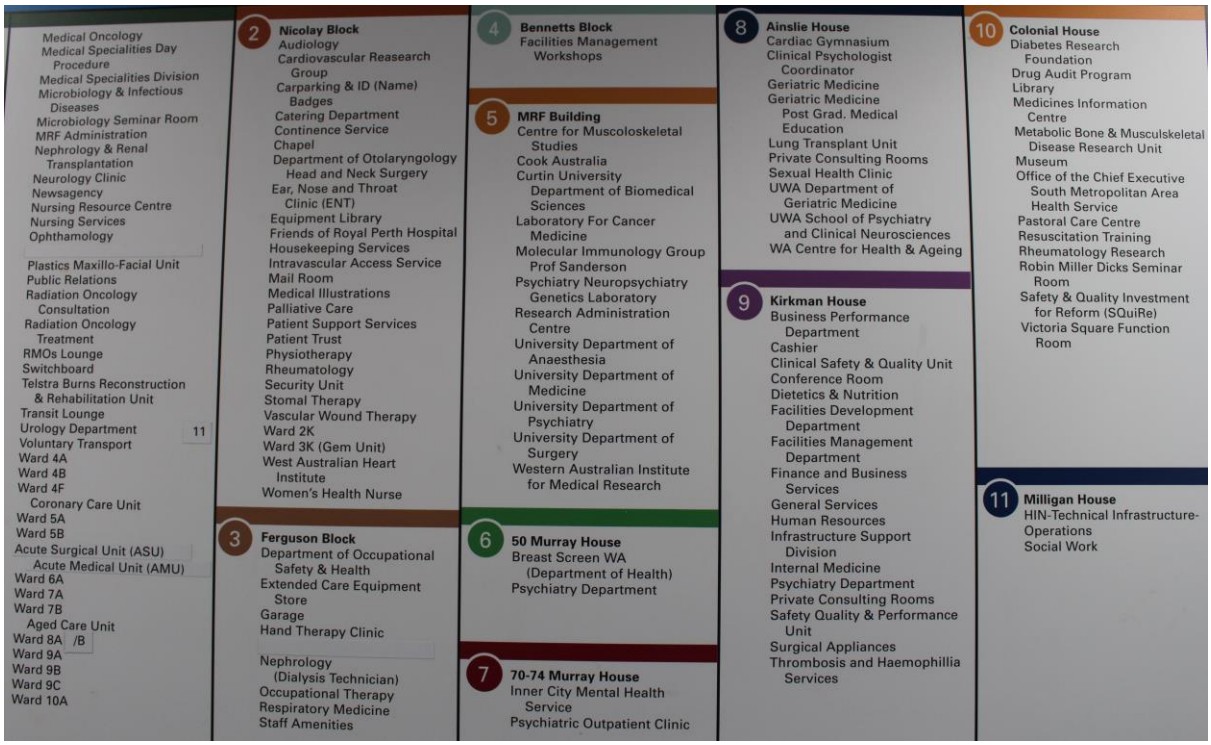


Figure 4 - Part of existing Main Directory board

Solution: By abandoning the requirement to list everything we then just focused on patients and visitor’s needs. The listings reduced to a much more manageable 87. These were then grouped under 5 headings; Wards; Clinics; Outpatient Clinics; Treatment Areas and Services. Services are retail outlets and other public amenities. *Figure 5* shows a part of the new Directory and you can see the improvement over the existing shown in *Figure 4.*

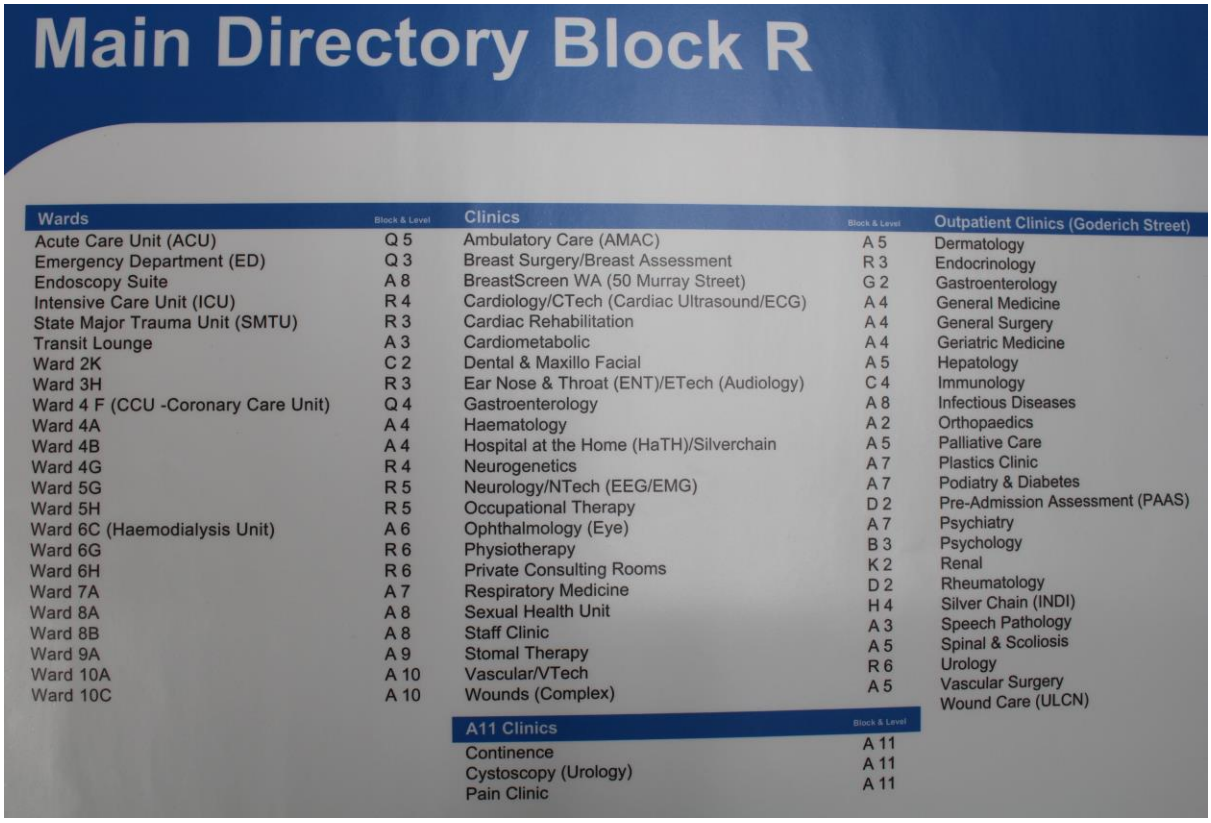


Figure 5 - Part of proposed new Main Directory board

4.1.2 <u>Site Plan - the use of the 3 dimensional “helicopter” view of the Hospital site for wayfinding is not beneficial.</u>

Refer to *Figure 6.* This image was added to Main Directory Boards to enable users to locate the Block they needed to go to relative to their current location. Nobody arrives at the Hospital in a helicopter, unless they are seriously ill (or Bronwyn Bishop) or injured, in which case they will not have to find their own way to the Emergency Department. The buildings are not shown to their correct vertical scale because several buildings would then be hidden. There is no identification of vertical transport, so I don’t believe there was any advantage. In fact I believe for most people the 3-D is just “noise”. Once inside the hospital they mostly move horizontally to their destination or to the correct Lift bank for the vertical part of the journey. 2 dimensional illustrations are easier to read and they allow more information to be included.

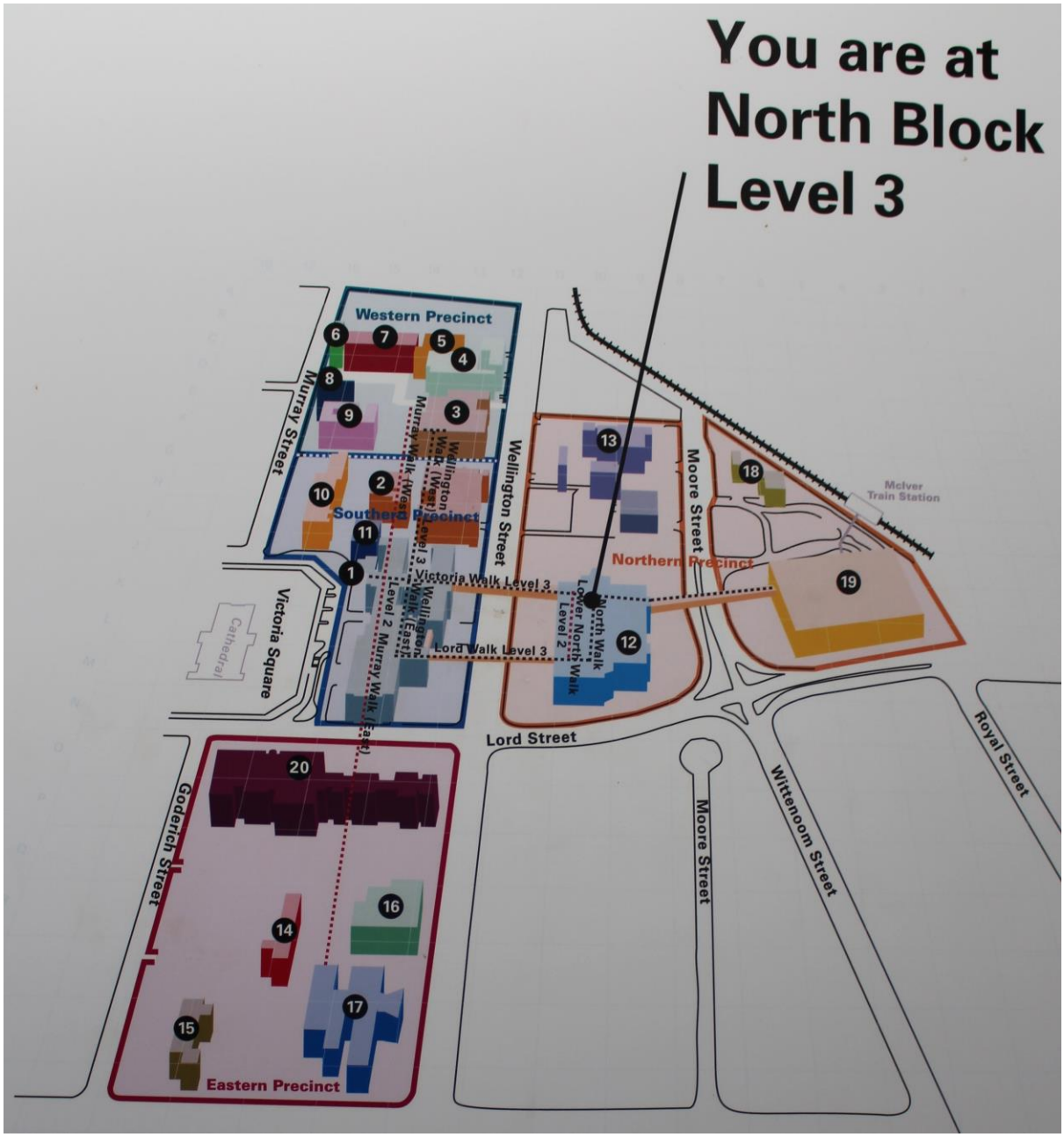


Figure 6 - Site Plan - existing 3-D helicopter view graphic (Main Directory board)

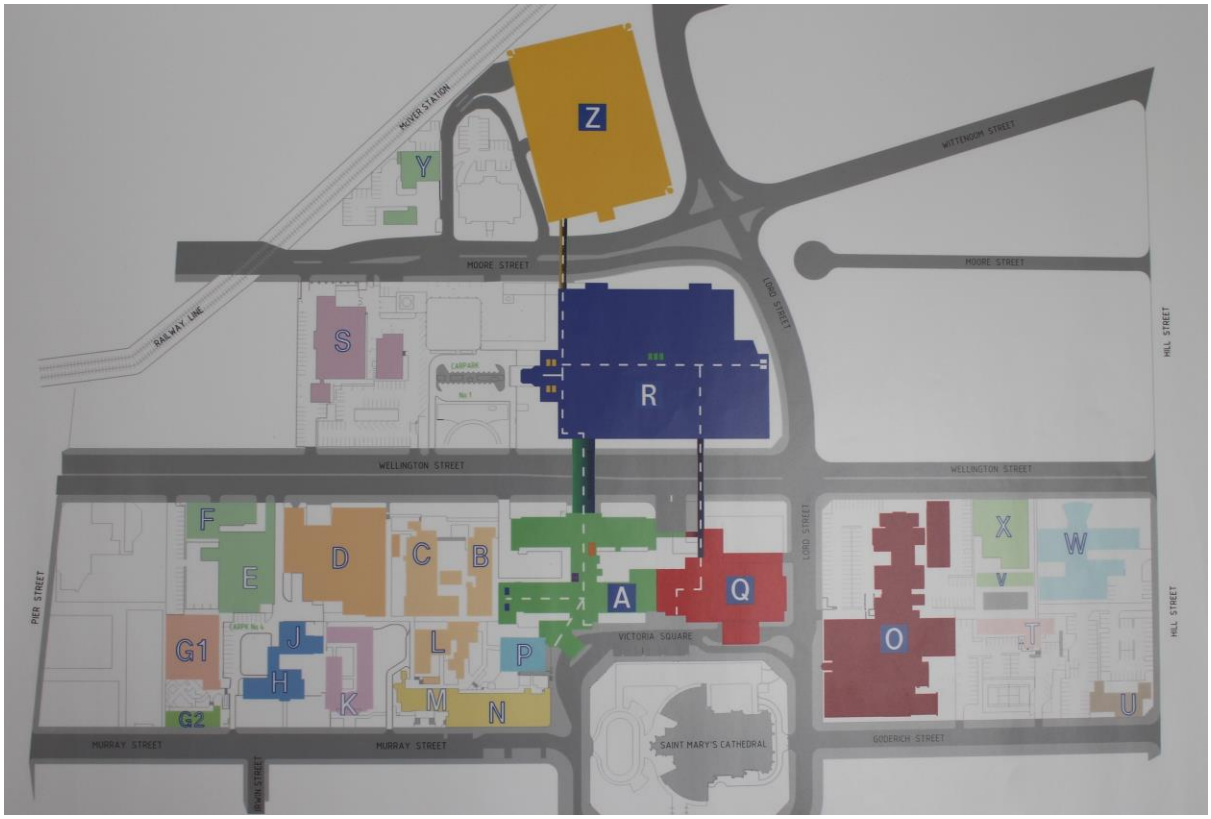


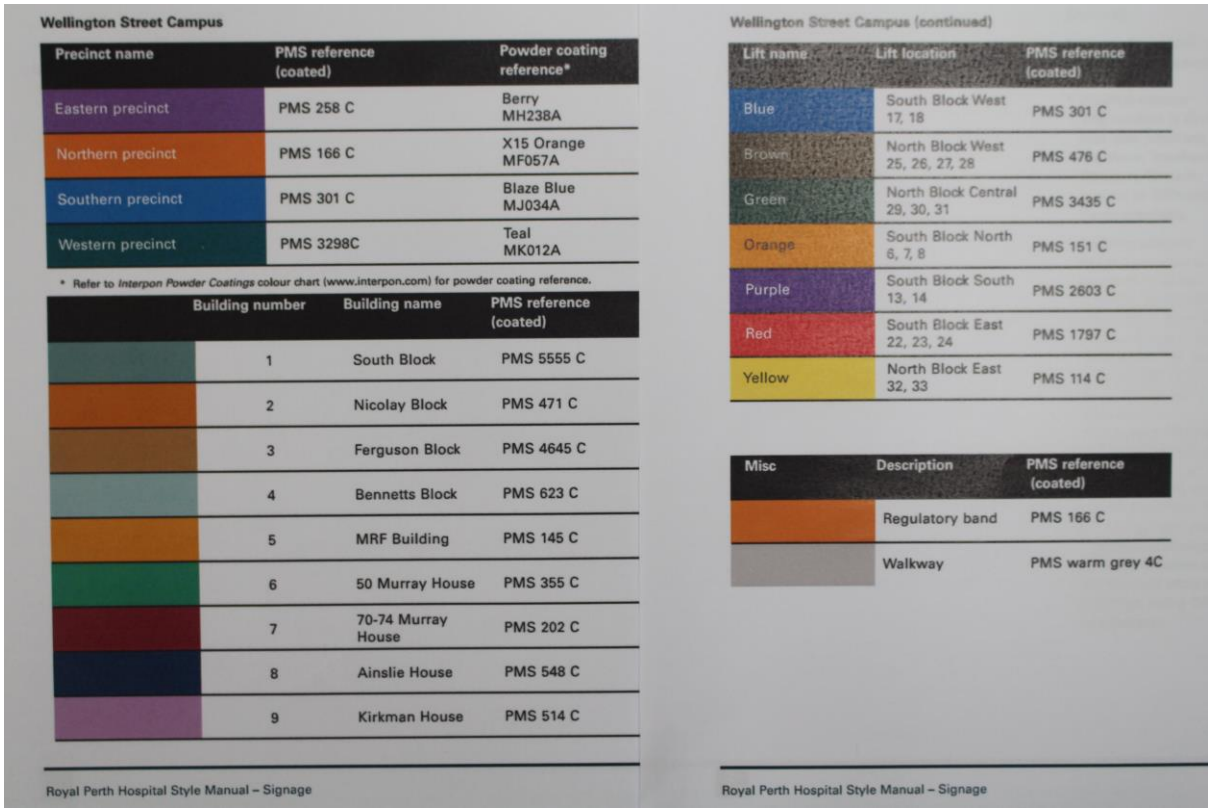
Figure 7 - Site Plan - proposed new 2 dimensional graphic (Main Directory board)

Solution: Return to a 2 dimensional site illustration. This is shown in *Figure 7* Note also that due to a recent downsize of the hospital last year, all clinical functions are contained with Blocks A, O, Q and R. Therefore, for the same reason we focused on the patients and visitors for the Main Directory Board we have used graphics to emphasis those four Blocks. All the ancillary buildings are therefore shown in muted colours.
Note: Unlike the existing system which uses colours as part of the identification system, the different colours here, is simply so it is easy to recognise where buildings start and finish.

4.1.3 Site Plan - the division of the site into “Precincts” (based on the 4 quadrants of the compass) which are then colour coded; Colour coding all buildings; naming all major walkways and then representing all this within the signage, is simply “noise”.

Figure 6 is where all these elements are presented. In my experience many people do not know which direction they are facing even when in the outdoors and have the benefit of the sun. Once they are inside a complex of interconnected building without a view to the outside and having to change directions several times during a journey, many will have lost their compass bearings. I believe most people do not recognise or appreciate this information, or if they do, would choose not to burden themselves to retain the particular shade of green for the precinct, plus the colour code of the building, plus the colour of the lift they need to use. *Figure 8* shows the colour pallet employed to code precincts, buildings and lifts. Consider

naming or describing to someone with minimal English language the difference between the five shades of greens identifying Western Precinct, South Block, Bennetts Block, 50 Murray House and the Green Lifts as shown in *Figure 8*. The end product is signage boards which end up looking like those in *Figure 9* and *Figure 10* where you sense there is some meaning to the colours but you have either not appreciated it or forgotten what it is. Therefore in the end it is just “noise”.



Wellington Street Campus

Precinct name	PMS reference (coated)	Powder coating reference*
Eastern precinct	PMS 258 C	Berry MH238A
Northern precinct	PMS 166 C	X15 Orange MF057A
Southern precinct	PMS 301 C	Blaze Blue MJ034A
Western precinct	PMS 3298C	Teal MK012A

* Refer to *Interpon Powder Coatings* colour chart (www.interpon.com) for powder coating reference.

Building number	Building name	PMS reference (coated)
1	South Block	PMS 5555 C
2	Nicolay Block	PMS 471 C
3	Ferguson Block	PMS 4645 C
4	Bennetts Block	PMS 623 C
5	MRF Building	PMS 145 C
6	50 Murray House	PMS 355 C
7	70-74 Murray House	PMS 202 C
8	Ainslie House	PMS 548 C
9	Kirkman House	PMS 514 C

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Wellington Street Campus (continued)

Lift name	Lift location	PMS reference (coated)
Blue	South Block West 17, 18	PMS 301 C
Brown	North Block West 25, 26, 27, 28	PMS 476 C
Green	North Block Central 29, 30, 31	PMS 3435 C
Orange	South Block North 6, 7, 8	PMS 151 C
Purple	South Block South 13, 14	PMS 2603 C
Red	South Block East 22, 23, 24	PMS 1797 C
Yellow	North Block East 32, 33	PMS 114 C

Misc	Description	PMS reference (coated)
	Regulatory band	PMS 166 C
	Walkway	PMS warm grey 4C

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Figure 8 - Colours of precincts, buildings and lifts (existing)

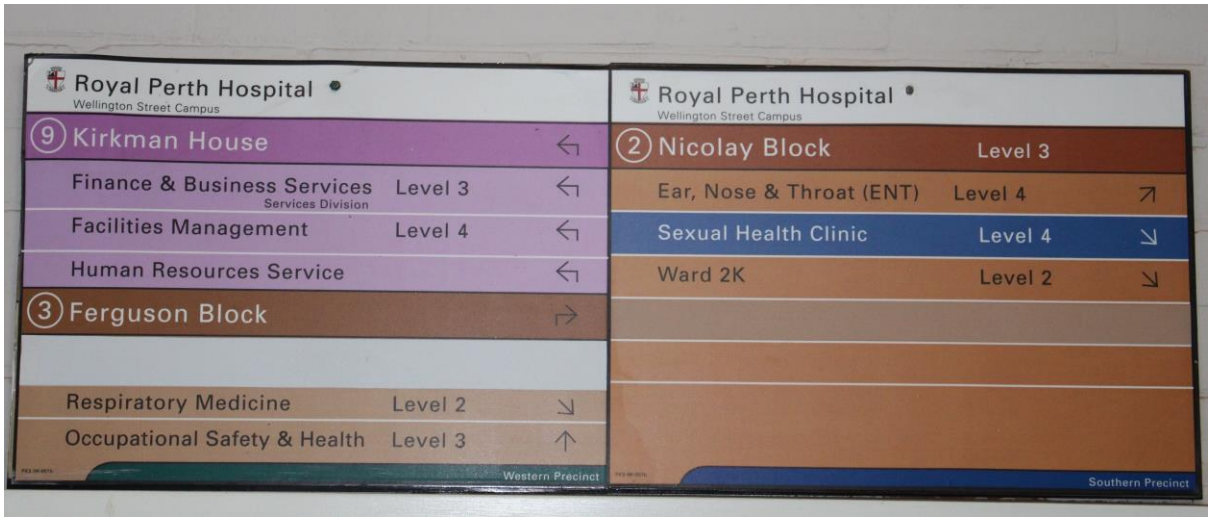

Figure 9 – Existing sign board with precinct (West & South) and various building colours

Figure 10 – Existing sign boards

Solution: the use of colour as an identifier has been restricted to the 7 Lift banks. The colour of all new signage will be dark blue lettering on a white background. This colour scheme is universally used and recognised for information signage. Also the colour contrast meets the mandatory requirement for the seeing impaired, which some of the existing colour combinations do not. *Figure 11* shows and illustration of what the new system signage will look like.

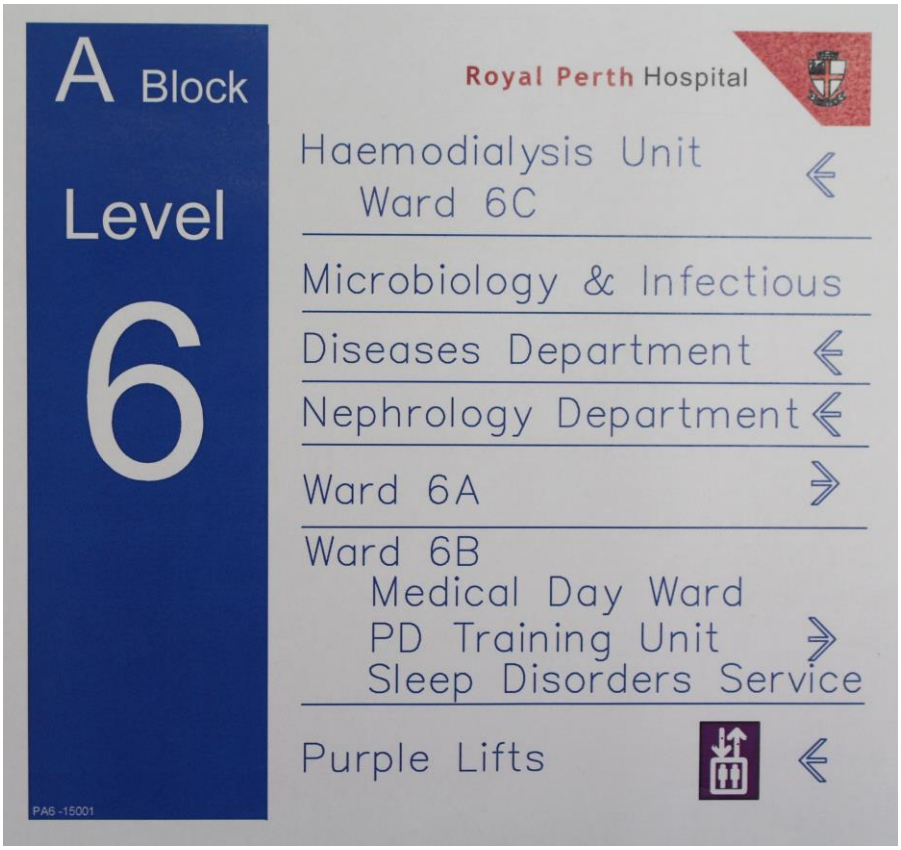

Figure 11 - Proposed new signage - style guide illustration

4.2 Building Identification:

<u>The system of identifying Buildings and other elements on site is problematic.</u>

The committee decided to change building identifiers from alphabet letters, to giving buildings names. This presented difficulties when labelling the 3 dimensional site images, so they also gave buildings, a number (Refer to *Figure 6)* (Note: the Engineering Department continued to use the lettering system). Naming buildings is not user friendly for those of different ethnic backgrounds and with limited English language. Most of these people will have mastered the alphabet, but to present them with the almost exclusively Anglo-Saxon titles of Nicolay, Ferguson, Ainslie, Marginata etc. as building identifiers is an unnecessary burden on them. Numbering building Blocks also has problems. When instructed to go to Block 3 level 2, I am sure, along the way, for some people, their recall will easily turn that instruction into Block 2 level 3. Since using numbers to identify levels is so universal, mentally exchanging level 2 for a letter is far less likely. The other problem is clearly illustrated in *Figure 12.* The building shown could easily be identified as building number 10. That number is in fact its street address. The pink sign behind shows it is really building number 9, Kirkman House.

Figure 12 – Existing entry signage to Building number 9

Solution: We returned to identifying all building Blocks with a letter of the alphabet.

4.3 Signage – subdirectories and directional signage:

The system of having signboards at each corridor junction or change of direction listing all the entities in all directions is very expensive and creates “clutter”.

Refer to *Figure 13.* Although you will be unable to read all the listing, I can confirm that all the entities listed above the door, is also listed on the sign on the adjacent wall. Therefore if any of those entities is relocated within the hospital, both of those signs and probably another 5 or 6 others all the way back to the closest main entrance will have to be altered. Apart from the high initial cost of all these signs, any alterations are also multiplied by the same cost factor, forever more.

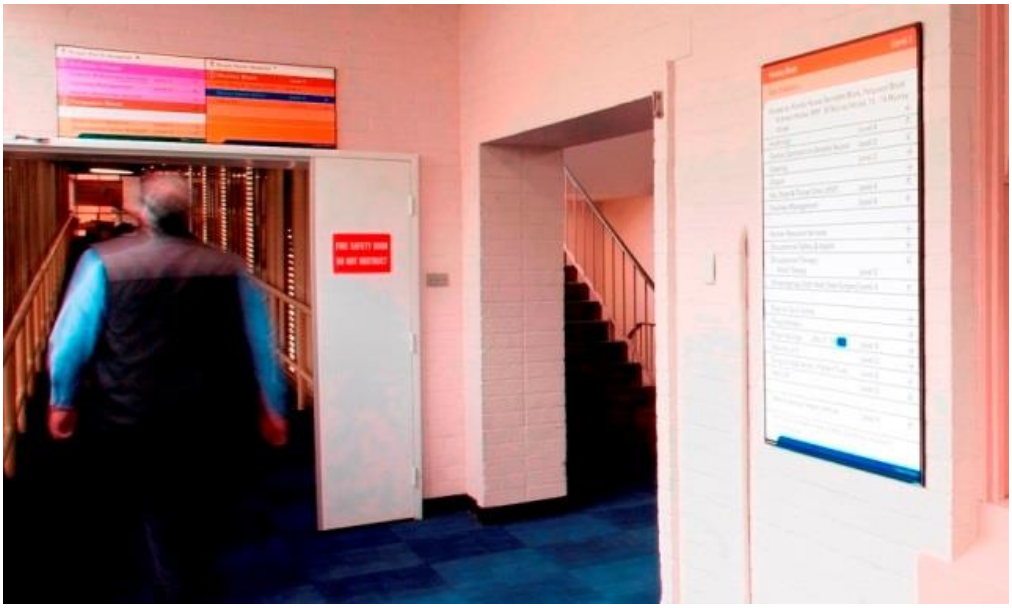

Figure 13 – Signage - existing examples

Figure 14 - Signage - proposed new to replace that shown in Figure 13

Solution: Limit and focus signage within the complex to directing people to the various building Blocks, using large letters to identify each Block. Once people have arrived at the entrance to the Block, have a signboard listing the entities within that Block and include directional guidance within the Block.

This approach is demonstrated in *Figure* 14 which shows the changes the new system would bring to the area shown in the previous *Figure 13.* The

sign above the door is simplified to indicate that building Blocks K & D can be reached by continuing up that passage. If any entity moves from either building, it has no effect on that sign, so no cost. The large letters K & D can be easily seen from the end of the 50m long corridor leading to it. The sign on the corridor wall states boldly that you reached the entrance of Block C on level 3 and then lists only the entities which are in Block C, so less “noise”, less “clutter”.

5. CONCLUSION:

The key strategies to employ in developing a good wayfinding/ signage system are:

5.1 Design your system assuming it is being used by a first time visitor to the hospital.

5.2 Design your system assuming the user has limited English language skills and/ or other cognitive or physical disabilities.

5.3 Keep it focussed. By focussing on patients and the public visitor, the system becomes more effective for those key users. The introduction of a digital system does enable you to deal with other users. Staff and visitors to staff areas are able to wayfind/ direct external parties to them by using other methods (e.g. log into Main Directory on their own computers; attach maps with wayfinding detail, to guide business associates/ visitors to their location).

5.4 Keep it simple. If graphic elements are employed they must either be obvious or explained and effective or they just become “noise”, which can be counterproductive.

5.5 Keep it simple. Use alphabet letters to identify building blocks in the wayfinding system, not names or numbers. Buildings may be named and have that displayed on the building, but it must be secondary to the Letter identifier and not used in wayfinding. Avoid using the letters o and i to avoid confusion with numbers. When all letters used, use Block AA, Block BB etc. Use numbers to identify levels within buildings. Use the large letter identifiers at the appropriate scale both internally and externally.

5.6 Be consistent. Maintain the same signage hierarchy, colour and typography throughout the Hospital. Do not let Architects use signage as a décor element on projects. It creates inconsistency and the risk of non-compliance re legibility. Entities must maintain the same name. This applies to how they are referred to clinically, by the main telephonists, clinic booking and admission areas and the signage system. Patients who have appointment letters identifying an entity using different terminology to the wayfinding system, creates great confusion.

5.7 Use colours selectively. Extending beyond the 6 primary/ secondary colours has problems. Shades/ hues of colours used for wayfinding can be difficult. Identifying/ describing aqua, aubergine, turquoise for example, to people with limited English language or possibly colour blindness can be a problem.

5.8 “Less is More”. Use large bold signage focussed on directing people to buildings as the first step. Sign posting directions to entities throughout the hospital, results in a massive number of signs, which apart from the cost, creates “clutter”, which then diminishes the effectiveness of the signage system. Those who enter the hospital complex through secondary entry, understand they will need to get to a main entry point, to obtain information/

guidance on wayfinding. Once people arrive at the correct building, sub-directory boards can direct them to entities within the building.
(Note: interactive digital touch screen monitors along with other strategies will be discussed in Part 2 of this paper).

5.9 Use the two reference documents referred to in this article. They are both, recently published and written by Australian State Government Health Departments. Together, they will cover everything you need to know.

References:

(1) NSW Government, Ministry of Health: Document number GL2014_018; *Wayfinding for Healthcare Facilities,* p.6, (October 2014),

(2) The State of Queensland (Queensland Health): (2010) Appendix 7 of *Queensland Health wayfinding design guidelines,* pp.32-34 (December 2010)