

# Happy Chappy Healing House: Can the spaces and environments within a children's hospital be designed to create hope: a case study in Anqing City, Anhui Province, China

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This research paper will propose and design a new children's hospital environment, which inspires hope by creating spaces that feel safe, happy, warm, and even bring joy. The project aims to reduce the fear; fear that manifests in both the patient and the loved ones who visit or stay with them. The architectural psychology of spaces will be combined with design principles of patient-centred architecture, to create environments for physical and psychological healing for younger patients and their loved ones. Using, Feng Shui which has developed over three thousand years to culminate in a design theory that involves ecology, natural phenomena, biophilia, conservation, spatial design, and architecture. There are four fundamental philosophies in Feng Shui: Ying Yang (complementary and balance), Bagua (Eight Diagrams), Wuxing (five elements), Chi (flow of energy). This project will use Ying Yang and Bagua plus the auspicious notion of "san yang kai tai" which literally translates to "three sheep open the harmony world". The principal aim of this research project is to create social hospital spaces that provide a sense of hope and provide a better atmosphere for sick children and their families. Creating modern patient-centred health care spaces may allow people in the hospital to forget for a moment that their child is unwell. While a children's hospital are primarily made up of several medical specialist departments, the implementation of better medical procedures in these areas is not the primary goal of this project. The focus of this project is on the child-friendly environment of public spaces, corridors and non-medical treatment areas of a children's hospital, and how the interactions within these spaces influence the child's (age 2-18) and their family's wellbeing, both physically and psychologically. The experiences of hospital care will leave a lifelong effect on a human being. Can we reinterpret the traditional impression of hospitals as places of diseases, death, and pain in places of hope, happiness, and life?

**Keywords:** *Designing for Hope, Children's Hospital, Social Architecture*

## 1 The context of Anqing City, Anhui Province, China

According to the National Population Statistics of Counties and Cities of the People's Republic of China and World Population Review, Anqing City is a Medium-sized City or Tier III city, which means it has a permanent population of 500,000 to one million. In 1903, the first Western-style religious and ethnic hospital was founded in Anqing City, by a medical doctor and missionary Harry B. Taylor named the St. James Hospital. The former hospital

buildings combined Baroque-style architecture and traditional Chinese architecture, creating the first Western-style hospital in Anhui province at the time. Currently, there are 779 health institutions in greater Anqing City, including 52 hospitals, 291 health centres, four outpatient departments, four clinics, and nine specialised prevention and treatment stations. (Fang 2017) Presently no children's hospital exists, which is specially designed for children with a child-centred design; there are only departments within the general hospitals. It is crucial to improve the health and well-being of children in Anqing City and create a new generation of children's healthcare facilities, which serve as a tool for the city children's healthcare improvement. Anqing City's health institutions have a total of 14,971 beds, including 9,735 hospital beds, 3,996 beds in health centres, 500 beds in the specialised prevention and treatment station, and 156 beds in the maternity and childcare station. There were 1.95 beds in health institutions per 1,000 population in 2017, which is lower than the recommended World Health Organisation (WHO) hospital-bed ratio of 4.5 beds per 1,000 population. It is also lower than the Chinese average hospital-bed ratio of 3.87 beds per 1,000 population. In the 2018 List of 'Organisation for Economic Cooperation and Development countries' Hospital-bed ratio, China is ranked 55th in the world, which is higher than New Zealand, Canada and many developed nations; however, there are never enough beds for the number of patients in need. The reason for this is that the Chinese hospital system accepts all patients, no matter how injured or sick they are.

## **2 Scope of the Project**

While a children's hospital is primarily made up of several medical specialist departments, the implementation of better medical procedures in these areas is not the primary goal of this research project. The focus of this project is on the child-friendly environment of public spaces, corridors and non-medical treatment areas of a children's hospital, and how the interactions within these spaces influence the child's (age 2-18) and their family's wellbeing, both physically and psychologically.

"The image of the hospital as a construction site, coupled with the natural fears of a child in a strange environment, remains ingrained in memory for many of us." (Verderber 2000 p3) Verderber reiterates that the ideal principle of children's healthcare is first to reduce the fear and distract from the pain before the designer focuses on creating a happy and hopeful environment for patients and their family. Roslyn Lindheim in (Verderber 2000 p3) states "The adjectives used to describe hospitals include dehumanising, depersonalising, neutering, frightening, uncaring. "I have never heard anyone describe a hospital as beautiful, peaceful, healing, warm, joyous."

## **3 A comparison of the New Zealand healthcare system and Anqing City, Anhui Province, China.**

### **3.1 New Zealand**

The New Zealand healthcare system is highly decentralised. This decentralisation is by design and aims to reduce loads on hospitals as much as practicable. Hospitals are intended to be used as a specialist critical care and emergency service; to achieve this, non-critical and minor procedures must be dealt with elsewhere.

"If you're sick and it's not an emergency, you should visit a family doctor (or 'general practitioner' – GP)". Ministry of Health. (2018)

In New Zealand, anyone needing general medical service will usually visit their local general practitioner (GP) clinic. General practitioners are specialists in generalised medicine. People will often visit the same general practitioner for many years, which enables the doctors to build a relationship with their patients and better understand the patient's health issues over the long term. Alongside GP clinics in the New Zealand healthcare system are Accident and Emergency (A&E) centres, which provide accident and minor urgent medical services, such as non-critical broken arms and legs, as well as after-hours care and x-ray services. Hospitals in New Zealand are free to visit for all New Zealand residents, and are fully equipped to deal with the spectrum of health conditions which are provided by the other areas of the New Zealand healthcare system but aim to be reserved for emergencies and significant non-urgent procedures. Visiting hospitals for minor and non-urgent conditions is frowned upon and actively discouraged. A critical role that hospitals play in providing an emergency medical treatment where the patient is in a life-threatening or unstable medical condition.

### 3.1.1 Benefits and Downsides

There are benefits and disadvantages to the decentralised medical system seen in New Zealand. The system aims to ensure that all patients are able to receive medical treatment in a timeframe, which is appropriate for the nature and severity of their condition. The decentralisation reduces potential bottlenecks and issues relating to the capacity of particular medical facilities, but also tends to increase the overall length of time taken for treatment. Patients often need to visit facilities which are in different physical locations, which can place an additional burden on those who do not have reliable access to transport. While quality public healthcare is available to all New Zealand residents at no or little cost, there are significant advantages in convenience and wait times for wealthier patients who can pay for private treatment. For the decentralised system to work GP, Specialist and A&E centres need to be able to provide a standard of service that is comparable to that received at a hospital.

## 3.2 China

The Chinese hospital and healthcare system functions in a fundamentally different way to the New Zealand system as it is highly centralised. There are local community health medical centres, but the hospital is still the first choice when people feel sick. Chinese hospitals function in a way similar to a scaled-up A&E Clinic, with a full range of specialist departments in the one location, rather than the specialist emergency department role seen in New Zealand. Hospitals in China include an outpatient's department, inpatients department, specialists, lab tests, emergency department, on the one site. All hospitals are operated by the government, which means they all have excellent medical resources. Upon arrival at a hospital, a patient visits a reception desk where they must present their National ID card or social security information. After registration, the patient will then be directed to the appropriate department for their needs. For example, a person with a broken arm would be directed to the Out-patient Surgery Department; someone with a chest infection or breathing problems would be directed to the Fever Clinic Department. These separate departments have doctors and equipment specialised to that particular health condition. After arriving at the correct department, the patient will wait to be seen by a doctor. If a patient needs to then go to another department, this process of going to the correct area and waiting can be repeated several times. Due to the large population and highly centralised nature of the system, waiting areas are generally overcrowded. Patients and their families

can spend a long time waiting, while their time with the doctor can be woefully brief: this can lead to people feeling frustrated and dismissed; even if the doctor has done everything from a technical perspective to deal with their problem.

### 3.2.1 Benefits and Downsides

The centralised system used in Chinese healthcare is fundamentally different from that in New Zealand. The Chinese system is very efficient concerning the density of medical facilities found in one location where one can get access to a full range of high-quality treatment and facilities on the same day at the same location. Having access to multiple specialist departments and a full range of state-of-the-art medical equipment in the same building is a significant benefit. However, the Chinese system is highly inefficient concerning the amount of time spent at the hospital, compared to the amount of time spent being treated. Much like the experience of visiting an A&E clinic in New Zealand, the Chinese system has extended periods of waiting before and after registration and before seeing a doctor. This “dead time” where the patient is waiting around without anything else they can be doing and is found to be very frustrating. Delays because of bottlenecks in the system, such as in the registration areas and insufficient doctor numbers, can be quickly and commonly further compounded by fluctuations in patient numbers. A benefit of a centralised system is quality control. Having all the facilities in one location, particularly in a field such as healthcare which is overseen by the government, allows for much easier standardisation and regulation of the quality of treatment, so the public feels confident that they will be receiving a high level of care.

### 3.3 How the New Zealand System Could influence the Chinese System

Completely reconstructing the Chinese healthcare system is firstly entirely unachievable and also vastly outside the scope of this project. It is also unclear if such drastic changes would be beneficial. Lower infrastructure requirements and quality control are significant factors in the healthcare system, particularly in developing countries such as China. However, this does not mean that there is little to be learned or gained from applying the ideas of a decentralised system to China and adapting them to work within the existing environment. Utilising the architecture and the design of the spaces within the hospital facility, there is potential to mimic the effects and results of a decentralised system within a single building. One theoretical example of this could be to separate the main registration area into two areas, providing one reception area for patients who are just visiting for a regular check-up (E.g. regular blood pressure checks) and having another registration area for all the other patients who have new or more severe conditions. This division would help to disperse crowds and reduce wait times, as well as allow the system to become more efficient, as each area can be specialised towards the types of patients who come to them.

## 4 How to Create for Patient-Centred Healthcare Looking at patients as individuals

Purves (2009 p76), posits that hospital care should be focusing on the care of the patient as an individual. “The view of patients as consumers, linked with the concept of customer care is bringing about many attitudinal changes to how medical services are delivered.” In his book, he raised the idea that art and environment heal people slowly, and according to Ernst Dimnet within Purvis (p77), “Architecture, of all the arts, is the one which acts the most slowly, but the most surely, on the soul.” Moreover, he postulates that environment design affects patients’ treatment. “The ethos of the building will become an important starting point

to achieve environmentally well-designed buildings that can offer therapeutic benefits to patients, as well as all of the users of the building.” (Purves p10)

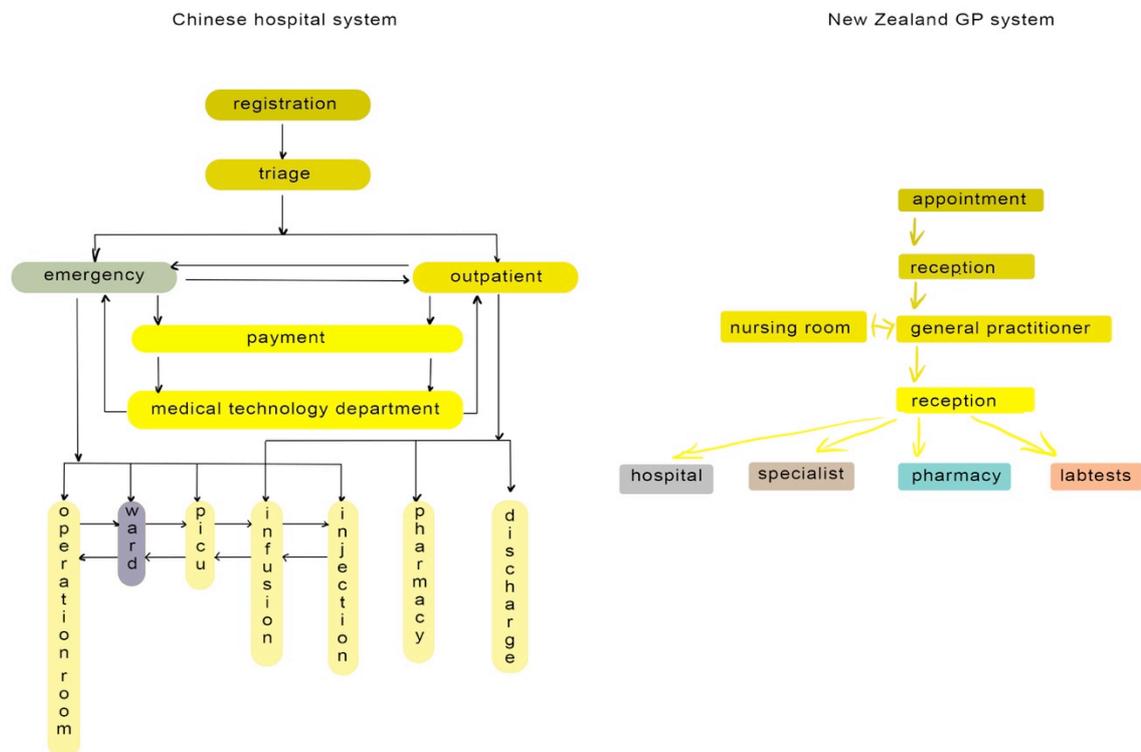


Figure 1. Comparison of Chinese Healthcare system and New Zealand Healthcare

The patient is the key, and the architecture design should focus on patients' need. Therefore, a children's hospital should be child-friendly and suit different child phase from new-born to eighteen years old. Kenneth C. Calman within (Purves p35) states "The patient is at the heart of the process and thus the environment within which they are cared for critical."

Christopher Day (2004) emphasized how children need different environments compared to adults. "Harsh, immobile, imagination suppressing surroundings are hardening and damaging to children's growth. They need soft, fluid and wonder-filled places for their imaginative world to blossom. (a play alcove, with coloured glass window, for four to six-year-olds)". Day attaches weight to the belief that children have different needs of environmental design, based on their different ages. "Younger children (new-born to twelve-year-olds) and older children (thirteen-year-olds to eighteen-year-olds) will be different not just physically but also the way they think about the world." They have different needs of the spaces. One needs things to be lower and more vibrant colour. Another needs more explanation, rich sensory experiences and delightful spaces. Younger children subconsciously connect with their surroundings and experiences; therefore, nature, art, and colours (p 217)

#### **4.1 The Patient is Not Just the Child**

When thinking about the design of a children's healthcare facility, it could be logical to think only of the specific needs of the patient. However, this line of thinking is overlooking one major factor. Children (particularly younger ones) are dependent on their families; dependant on the food, shelter, protection, and loving care that families provide. This bond is even more significant than just healthcare, and it is core to the very survival of humanity. When considering the positive effects and design implications of patient-centred care in a children's hospital, it, therefore, seems only logical that to receive the maximum benefit from this style of design the scope of the "patient" should be broadened to include the child's immediate family. If a child patient is happy, but their family is exhausted, worn out, uncomfortable, hopeless, and full of fear, this would not be expected to achieve the desired result, especially when considering the role that family plays in the long-term health outcome of a child.

#### **4.2 Child Scale**

Mark Dudek suggests listening to what children have to say about their daily life, then getting essential details from them as the key to designing their spaces. In his research, he mentions that children have limited knowledge of space, so experiences, visual connection, and their physical engagement with the environmental impact on their sense and understanding of the places. (Dudek 2005 p8)

#### **4.3 Hope in Healthcare**

"Hope is an optimistic attitude of mind based on an expectation of positive outcomes". More than just being something, which is nice to have, research has shown that hope has a range of significant and influential benefits. Profoundly hopeful individuals have been found to perform better in "athletic, academic, occupational and health outcomes." (Dockray 2010) It is thought that this is likely due to a positive relationship between hope and mood. It has been well documented that one's mood has a direct effect on physical health, such as immune system response and cardiovascular function. (Dockray 2010) Hope has a positive relationship to higher overall life satisfaction, with hope also acting "as a buffer against the impact of stressful life events" (Valle 2006) resulting in people being happier overall and staying happier for longer in adverse situations. In terms of the connection between hope and children's healthcare, a relationship has been seen between children's experiences with the healthcare system as a child, and their hope and optimism as well as overall health outcomes as an adult. Those who had negative experiences as a child were found to be less optimistic and have poor healthcare behaviour as adults. (Jones et al. 2008) Children who have high levels of hope have also been seen to tolerate pain better (Synder 2005) and be more likely to follow the instructions of a doctor. The optimistic attitude inherent in hopeful individuals plays a crucial role in successfully coping with a medical illness and its prognosis, as well as in improving health-related quality of life. It is, therefore, essential to consider hope when designing health care facilities.

#### **4.4 Special Considerations for China**

When designing architecture in China, there are specific issues that have unique or increased importance when compared to how one might design in the western paradigm. These issues range from specific medical requirements to dealing with cultural differences, family structures, and cultural norms. In China, there is currently a specific focus on children's healthcare. China is still a developing nation and, despite making rapid improvements and advancement in economic prosperity and healthcare, there are still issues that disproportionately affect developing nations, which need to be addressed. In

Anqing City, poor child health is a significant issue. Compared to other large cities in China, a lack of hygiene and health education has made the Anqing children's health situation lower than the national average. Moreover, Anqing City is an area with the rare epidemic of schistosomiasis (colloquially known as Snail fever or Bilharzia).

#### **4.5 Family Structure**

From 1979 until 1 Jan 2016, China had a strict family planning policy, commonly referred to as the One-Child Policy. The result of this on the family structure is that now there are commonly two generations of the population who only have one successor to continue their family lineage. It is historically and culturally typical and essential for the older generation to move in with their child or grandchild as they reach retirement age. Not only is there significance in the emotional connection of the child carrying on the family name and lineage, but there is also economic significance, as the working child is expected to support their retired family members.

China is officially an atheist country, but it has a long history of cultural spirituality. The teachings of Confucius are not as actively practised as they once were, although the ideas and principles are a substantial part of Chinese society and cultural identity, particularly amongst the older generations. This cultural spirituality is seen in the form of Feng Shui. For over three thousand years, Feng Shui has developed a design theory that involves ecology, natural phenomena, biophilia, conservation, spatial design, and architecture. There are four fundamental philosophies in Feng Shui: Ying Yang (complementary and balance), Bagua (Eight Diagrams), Wuxing (five elements), Chi (flow of energy). Feng Shui is traditional Chinese geomancy (a way of interpreting divine patterns). The core of Feng Shui is to achieve harmony between humans and nature, and the spiritual engagement and integration of the environment. If Feng Shui rules are applied to people's life objects, it is believed that would improve their wealth, health, luck, fame, relationships, and knowledge.

One such example is the idea that buildings should face south (China is in the northern hemisphere, so it is equivalent to buildings facing north in New Zealand). We now know that facing buildings south is beneficial for a range of health conditions, as well as physical comfort. The increase in light and heat helps to keep buildings warmer and drier, reducing the negative health impacts commonly seen when living in damp environments. The practice of positioning living spaces towards the sun is now a fundamental part of good architectural design, and there is a wide range of research backing this up. Historically in China, this was linked to the benefits of Feng Shui. In this project, two of the four fundamental philosophies will be explored and used. They are Ying Yang and Bagua. Wuxing and Qi are out of scope for this project.

#### **4.6 Ying Yang (Complementary and Balance)**

Ying and Yang are the two opposing principles in nature; the former feminine and negative and the latter masculine and positive. The symbol of Ying Yang is a circle that is separated by a curved line to black and white or solid and void; black represents Ying and white represents Yang. The black part has a white dot in it, and there is a black dot in the white part. Therefore indicating that Ying has Yang inside of it, and Yang also has Ying inside of it. The two elements are a unity of opposites and interconversion; they complement and balance out each other. In ancient China, people used Ying Yang to explain and describe objects because things were created in pairs. Ying Yang creates the balance and harmony of the natural environment and atmosphere.

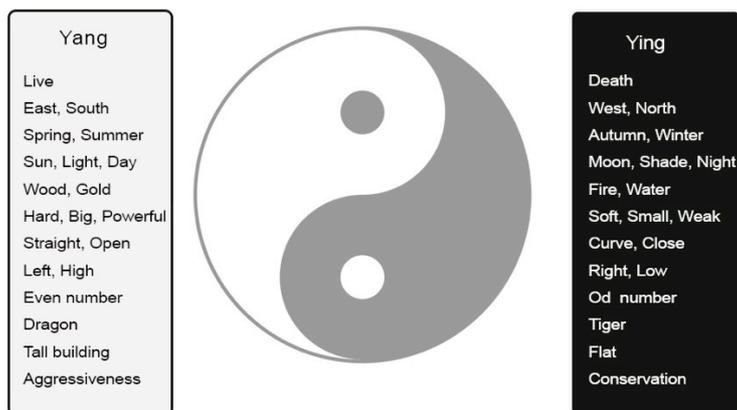


Figure 2. Ying and Yang elements, as pertaining to health care

### 4.7 Bagua (Eight Diagrams)

Bagua is a system linked to the change of objects within the environment. The two symbols of Ying Yang are combined to create eight diagrams which explain natural phenomena. The eight diagrams are (Qian) Sky, (Kun) Earth, (Xu) Wind, (Zhen) Thunder, (Kan) Water, (Li) Fire, (Gen) Mountain, (Dui) Lake. Each of the diagrams has its direction, colour, number, and element, which can be matched and combined to become 64 terms that symbolize everything in the world. Bagua claims that if directions, materials, colours, and shapes are used correctly, this will improve a person’s wealth, health, reputation, relationships, family, fertility, skills, and career.

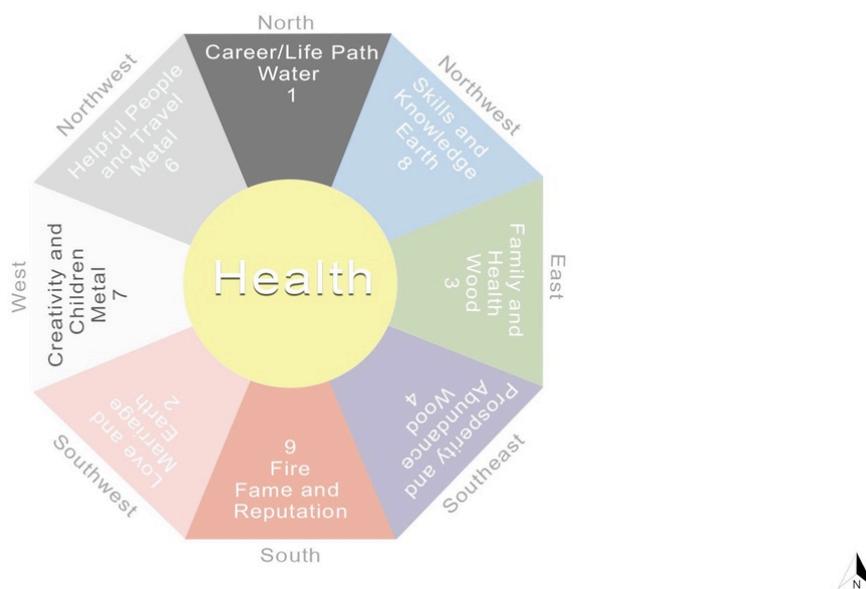


Figure 3. Bagua elements

## 5 Addressing the Site Through Bagua

Having facilities that allow people to connect with their spirituality has been shown to improve levels of hope, combined with the vital cultural importance of Feng Shui, has led to the principles of Bagua being used to address the overall site layout as Bagua is the ancient

Chinese methodology used to locate different spaces. Health is in the centre of Bagua, which dictates that the main Outpatient Department and Medical Surgery Technology Department are located in the centre of the site; therefore, Yellow is used as it is the representative colour of health. Red is the representative colour of fame and reputation and is therefore perfect for the south side main entry. The wards will be located on the north side, which represents life paths. Black is the representative colour of the life path. There will be one main entrance on the south side of the site, which will go directly to the Outpatient Department. If the patient's illness requires further treatment, they will be directed to the Medical Surgery Technology Department; therefore, the connection is needed between these two departments. On another side, the Emergency Department will have its own entrance, and it will also require quick access to the Medical Surgery Technology Department. A link between the wards and the Medical Surgery Technology Department is essential also. Consideration has been given to the young patients in the wards, who have different requirements to those in the Outpatient Department. They need safe, fun, relaxing environments and the parents need relaxing spaces too. On the Northside, there is an entry for visitors for the wards, and close by is a motel for long-term visitors and families. A dining hall will be open to the public. The colours used in the different departments are related to Bagua.

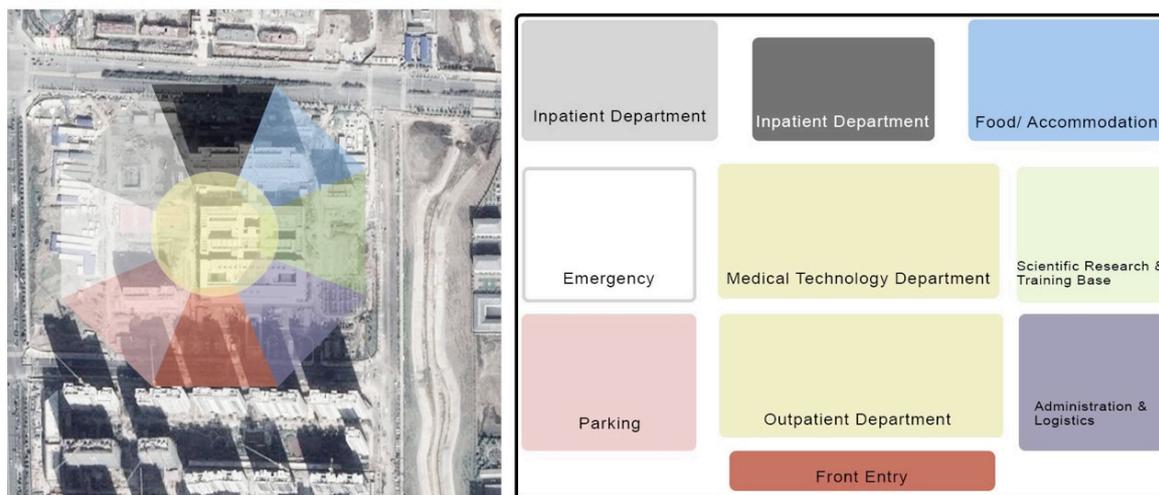


Figure 4. Bagua and Site: Daqiao Economic Development Zone, Anqing City

## 6 Exterior of Building

Addressing the buildings through achieving the Balance of Ying Yang: while new-born babies and children are healed in a hospital, which can be considered Yang, overall most patients who stay are sick, which is why hospitals are generally considered Ying environments. The architecture of the hospital should, therefore, have a more significant number of Yang attributes to create balance within the environment. A few of the elements that can bring Yang energy to the building include stone, concrete, steel, and wood. Natural sunlight is directly from the sun, and "sun" is pronounced "yang" in Chinese. This is the key

of Yang energy buildings. Even numbers, along with sharp edges and clean-cut design are considered aggressive in Feng Shui, and will also bring Yang energy to the building. Stone carving on the building, or sculpture, is a way to represent long life, happiness, luck, health, and Yang.

## **7 Metaphors and Fables**

Ancient Chinese people used the imagery and metaphors of stories/fables in their buildings, through carving. In traditional Chinese storytelling and mythology, the connection between elements and beings who share similar traditional characteristic and pronunciations is essential. For example, the pronunciation of the word for a bat in Chinese is the same as the pronunciation for the word for fortune and happiness. Therefore, the bat has become a symbol for these attributes.

This kind of connection is significant and vital in traditional Chinese storytelling and wordplay and continues to be relevant today. In Chinese, Sheep is pronounced “Yang” which shares the same pronunciation as the word sun. Therefore, sheep and sun-related patterns are considered Yang energy. An auspicious phrase “san yang kai tai” literally translates to “three sheep open the harmony world”. The content of this image is three sheep looking up at the sun. It symbolises the beginning of spring when all the flowers bloom, farmers start planting rice, the cold winter is gone, and there is a fresh start to the year. A bat and peach combination indicates good fortune and long life. Bat (Fu) shares the same pronunciation as happiness (Fu). In an old Chinese story, the peach was the Queen Mother of the West’s (goddess in Chinese religion and mythology) fruit, which was planted in heaven. It can bring anyone who eats it an additional extra six hundred years of life. In this research project, the design will use the concept and pattern of “san yang kai tai” (three sheep looking up to the sun) for the three central departments; Outpatients, Medical Surgery Technology and Ward. Yang elements will be included externally in the building design. Additionally, bat, deer, sheep and peach patterns will be used for the building’s interior design, for different functional spaces.

## **8 Registration Area**

The registration process in Chinese hospitals has traditionally been a significant concern and bottleneck in the system. The process is slow, painful and frustrating, and creates a range of feelings, including hopelessness, for patients. Powerlessness: The lack of control over the situation leaves patients feeling powerless and at the mercy of the system. Limitedness and helplessness: Due to the physical or mental limitations of some patients, they may find it difficult or entirely unachievable to communicate their condition with those at the registration desk. Similarly, the process of standing in a queue of people for extended periods is something that may be difficult or unachievable for some patients. Captivity: Even for the non-disabled person, being forced to stand in large crowds of people for extended periods is an unpleasant experience. The current system is not patient-focused; it is system-centred. There are no options or scales, nor any degree of flexibility designed into the system. It is a “one size fits all” approach.

## 8.1 Solutions: There are three different styles of registration hall:

### 8.1.1 Street style

A street-style hall provides essential services and commercial areas along the sides of the hall. It provides ample spaces for visitors and multiple visual connections. It brings the community into the hospital setting, reducing the hospital-like feeling. For a children's hospital, it can provide a distraction for children and relax them. The street style registration hall makes it easy for patients and families to follow directions.

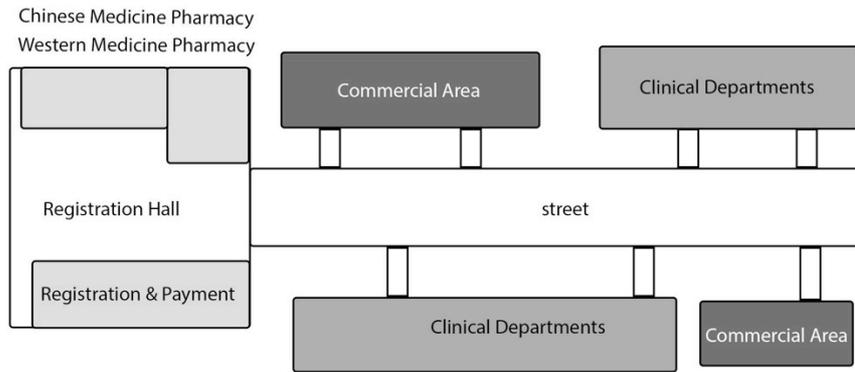


Figure 5 Street style

### 8.1.2 Courtyard style

A courtyard style registration hall has all the essential services in one lobby area and all the different clinical departments around the four sides. It is clear to see where the department is that the patient needs to go to, but this layout does not create any sense of entry space, and it is easy for the central area of the hall to become overcrowded.

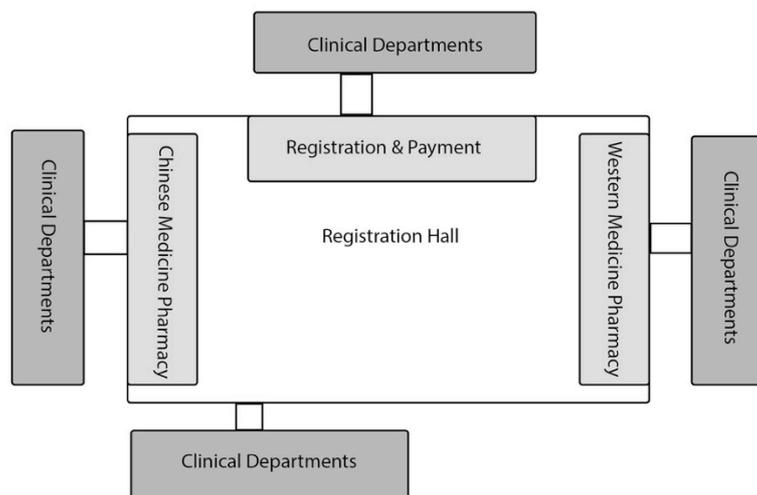


Figure 6. Courtyard style

### 8.1.3 Wings style

A wings-style registration hall has different clinical departments on the left and right sides of the main hall area. This provides an excellent visual reference for visitors when they enter

the hall, but if the visitor goes to the wrong place, it requires a great deal of walking for them to get to the correct area.

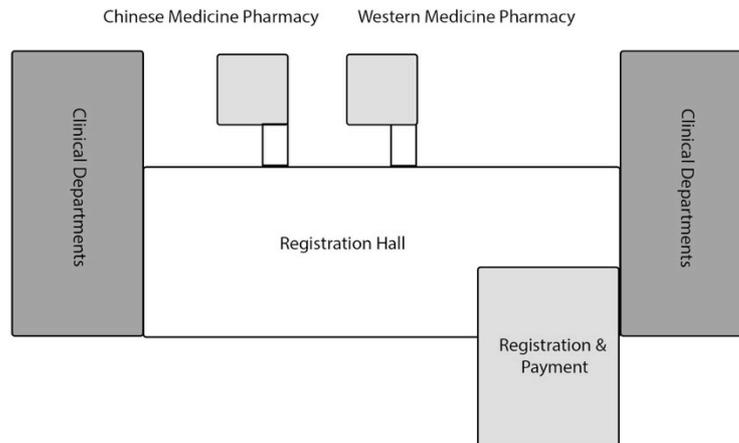


Figure 7. Wings style

## 9 Clearly defined and separated areas for repeat/regular check-ups

In China, people have to visit the hospital for things that in New Zealand would be part of a regular check-up. Including regular check-ups such as blood pressure readings and receiving IV drips. The fact that these areas are not separated also adds to the congestion seen in the registration process. Improvements to this system could be seen by taking inspiration from the New Zealand model of decentralised healthcare. This project would propose to separate the irregular and regular facilities within the outpatient department building and give each their own area and reception. Not only will this reduce the number of patients visiting the main registration area, but it will also allow both registration areas to better cater to the needs of those who are visiting them. The design will locate the main IV drips (infusion) room and injection room near the main entry for repeat patients.

### 9.1 Key Issues: Unpleasant waiting areas

Patients and their family spend much time waiting for treatment, and the waiting areas are usually rather unpleasant. They generally consist of little more than a few rows of uncomfortable metal chairs in a room with sterile white walls; often they are not even separate areas, and the chairs just run along the sides of a hallway. These unpleasant waiting areas are dull, uninspiring, and provide little in the way for the different ages and abilities of people, nor do they make any accommodation for families to socialise. Children scale furniture are not provided for, and there are no spaces for the children who visit the hospital to play or have any fun while they wait. These waiting spaces are depressing and deeply unpleasant to spend time in; they make the patients, and their families feel unhappy and hopelessness.

### 9.2 Key Issues: Hospital Happiness

Typical Chinese hospitals at the best of time are dull and uninspired. The sterile environment and highly functional architecture do little to inspire hope or joy. We know that hope, and the effect and connection it has with mood have significant effects overall wellbeing and health outcomes. However, the current hospital designs do little to improve the mood of those who visit them, and usually, the opposite is true with hospitals leaving people in a worse mood

than when they entered. This negative shift in mood and hope likely have significant adverse effects on the patients' effects overall wellbeing and health outcomes

### 9.2.1 Solution

The building will aim to make the visit of patients and their families as enjoyable as possible. The design will include a range of colours, textures, art, and sculpture that will capture the imagination as well as a range of spaces and design elements that will aim to create a feeling of wonder and joy. The architecture of the building through its design will aim to make sure that everyone who visits leaves happier and more hopeful than when they arrived.

The Outpatient Department will aim to provide:

- Courtyards that have a visual connection for infusion patients and medical staff.
- Street-style registration hall to keep people flowing, bring the community in, minimise the look of the hospital-like environment.
- Separate visitor and medical staff entrances, to give them their own spaces and ease of access.
- Children's play spaces on each floor to provide distraction and relaxation for different age groups of sick children.
- Façade that helps to utilise direct sunlight connects with Feng Shui elements and provides for a relationship with the natural surroundings.
- Soft material to reduce the harshness and cold feeling of the hospital.
- Different colours and theme to category different area and clear wayfinding



Figure 8. Southeast View – Main Entrance



Figure 9. Internal walk way and shops

## 10 Summary and critical appraisal of research

The culminating design is an example of how the spaces and design elements of a hospital, alongside the decentralisation of a centralised healthcare system, can work to provide patient-centred care that ultimately makes hospitals more hope-filled environments.

Models of successful patient-centred hospitals and joy-filled children's facilities were explored, as was research into Chinese cultural and medical history to understand better the roles these could play in making improvements and finding solutions to problems found in the Chinese healthcare system. The project aims to create a hospital that better fits the needs of its patients through having design elements and spaces that can cater to a range of ages and abilities as well as making these spaces flexible enough to be used by all in a comfortable way. As research on this project progressed, it became apparent how significant but underutilised the power of hope is to medical outcomes. The project uses strategies for creating hope, such as strengthening interpersonal relationships, exploring faith and gaining control, and then applies these to the design.



Figure 10. Left: Northwest View – rear, Right Atrium and Lobby

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