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DANDONG RAILWAY STATION

TRANSIENT INTERSECTION

Zihao Tang

A thesis submitted in partial fulfilment of the requirements for the degree of Master of Architecture (Professional) in Architecture,
The University of Auckland, 2012
ABSTRACT

Dandong is a thriving and vibrant Chinese frontier city on the northeast border of China and North Korea. Historically the city played a vital and important role in connecting China to the Korean peninsula by land and sea. Since the end of 1953 Korean War, North Korea became increasingly isolated for political and ideological reasons. All cross border trade and exchange with the outside world were severed except for the solitary bridge crossing over the Yalu River at Dandong. In fact, when the late North Korean dictator Kim Jong Il travelled to China by train, his train would without exception cross the railway bridge at Dandong. Dandong is therefore literally the gateway city to the hermit kingdom.

As a consequence of population growth over the years, Dandong and its associated city infrastructure are under constant development to meet the insatiable demand for growth. This thesis project examines and investigates the role played by the rail link over the solitary bridge crossing by assuming that the gradual opening up process would continue after the recent change in North Korean leadership. A new railway station would be needed on the border as part of the project to build a new high-speed rail network in China, which could potentially be extended into North Korean territory. To do this, the thesis project proposes to build a new Dandong railway station over the existing site on the bank of Yalu River by investigating the complex issues of site, place, culture and journey involved.
in cross border travel. The new railway station would be placed at the intersection of Chinese and North Korean culture, and at the point of contact between the two civilizations leading to increased communication and exchange over the Chinese and North Korean border.
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1. INTRODUCTION
Dandong (丹东) is a thriving and vibrant Chinese frontier city of 2.4 million people on the northeast border of China and North Korea.¹ Historically the city played a vital and important role in connecting China to the Korean peninsula by land and sea. Since the end of 1953 Korean War, North Korea became increasingly isolated for political and ideological reasons. All cross border trade and exchange with the outside world were severed except for the solitary bridge crossing over the Yalu River at Dandong. In fact, when the late North Korean dictator Kim Jong Il travelled to China by train, his train would without exception cross the railway bridge at Dandong. Dandong is therefore literally the gateway city to the hermit kingdom. Till this day, China remains North Korea's largest trading partner and all goods and passengers are transported over this railway bridge between China and North Korea.

China is currently in the process of constructing a new high-speed rail network to replace its aging railway infrastructure and to connect all major urban and economic centres to the new rail network. Dandong being the frontier city on the northeast border of China and North Korea is part of this high-speed rail network under construction. By bring the high speed rail connection to Dandong, it becomes possible to extend the high-speed rail network into North Korea over the solitary bridge, and thus further integrates North Korea with the rest of the

world as part of the gradual opening up process notwithstanding the recent change in North Korean leadership. Rail transportation and infrastructure will therefore continue to play a vital and important role in connecting China to the Korean peninsula, and as a result of these developments a new railway station would be needed at Dandong to replace the existing station as part of the upgrade project.

To do this, the thesis project proposes to build a new Dandong railway station over the existing site on the bank of Yalu River (鸭绿江) by investigating the complex issues of site, place, culture and journey involved in cross border travel. Chapter 2 and 3 examines the history and geography of the existing site, followed by a site analysis in Chapter 4. Chapter 5 uses the Berlin Central Station as a case study of building a new railway station in the city centre in order to understand how such railway stations would operate, which is further elaborated in Chapter 6 in a careful breakdown of functional and operational requirements. Research for relevant architectural theories and ideas underpinning the design is carried out in Chapter 7 through 10. Finally, concepts and design for the new Dandong railway station is explained in Chapter 11 and 12 that compliments the final presentation of this thesis project together with drawings, models and slides.
2. HISTORY
Dandong railway station (then simply known as Dandong Station) and the railway bridge crossing the Yalu River was first built by the Japanese in 1909 to connect the Korean peninsula to northeast China for transporting natural resources during Japanese occupation in the early twentieth century. The first railway station had a passenger hall, an administrative building attached to the hall, and the train platform behind the hall for boarding trains (Figure 2.1). Crucially, the railway was built on raised tracks deliberately constructed to avoid periodic flooding on the riverbank. The railway station and railway had since then underwent several further expansions including a second bridge by the Japanese in 1937 (Figure 2.2). Because the two bridges were the crucial transportation link connecting China to the Korean peninsula, they were repeatedly bombed by the Americans during the Korean War in the early 1950s. After the war, only one of the two bridges was repaired and the other bridge remained in ruin (Figure 2.3). The railway runs over the repaired bridge and remains in service till this day. Major work was carried out in both 1987 and 2008 with the construction of a new railway station on the original site along the railway (Figure 2.4).

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3 The ruined bridge remains till this day to commemorate the Korean War, and has since become another landmark of Dandong.
Figure 2.1: Dandong Station in 1909
Figure 2.2: Dandong Station in 1965
Figure 2.3: Dandong bombed bridge during Korean War
Figure 2.4: Dandong Station in 1987
3. GEOGRAPHY
Figure 3.1: Country

AREA: 9,671,019 km²
POPULATION: 1,339,724,852
23 PROVINCES
5 AUTONOMOUS REGIONS
4 MUNICIPALITIES
2 SPECIAL ADMINISTRATIVE REGIONS
Figure 3.2: Province
Figure 3.3: City

AREA: 14,981 km²
10.27% of Liaoning
0.15% of China
POPULATION: 2,409,697
5.91% of Liaoning
0.18% of China
3 districts
2 towns
1 autonomous county
Geographically, the city of Dandong is located in northeast China in the province of Liaoning (辽宁省) and next to the Changbai Mountain (长白山) in a mountainous region on the border between China and North Korea (Figure 3.1 through 3.3). Naturally Dandong was first settled on the riverbank next to the Yalu River where the land is relatively flat and suitable for agriculture. However because the city is built on a flood plain with parts of the city only two metres above sea level, Dandong is subjected to periodic flooding despite flood defences built along the river. Over time the city grew and expanded along the Yalu River in both directions following the contours of mountain and river.
The Yalu River is also the official borderline between China and North Korea, and on the opposite side of the river is the North Korean city Sinuiju (Figure 3.4). Yet despite the short distance over the Yalu River, cross border trade and travel is severely restricted, and all cross border traffic over the solitary railway bridge is closely monitored by the respective border and custom controls on both sides of the border. Nonetheless, a soaring trade across the border developed over the years where natural resources such as wood, coal and iron ore are transported to China via rail with food and manufactures to North Korea despite the international sanctions against North Korea. Due to this strategic economic link, Dandong developed into a transport and commercial hub on the Chinese and North Korean border, and in turn drove the rapid economic development of the city for the last three decades.
Figure 3.4: Aerial Photo, Chinese and North Korean border along Yalu River
4. SITE ANALYSIS
The site for the original railway station was purposely chosen by the Japanese to facilitate the creation of a separate industrial zone and transportation hub on the city fringe. Railway was chosen as the preferred mode of transportation for transporting natural resources throughout the region due to its inherent efficiency in carrying bulk and large quantities of material by rail over long distance. Despite the greater speed and increased flexibility offered by modern airplanes and motor vehicles, the inherent advantage of railway transportation remains and therefore the railway has been continuously maintained and upgraded over the years.
Figure 4.1: Panorama of old Dandong
Figure 4.2: Panorama of new Dandong
At the same time, the city of Dandong continued to grow from the historic city centre and kept expanding along the river bank, and in the process turned what was once periphery on the city fringe into new urban centres (Figure 4.1 and Figure 4.2) as is frequently the case during city expansion:

Most railway stations still tend to be where they were originally built. By now, however, they are immersed in a dense, functionally mixed and historically stratified urban fabric. ⁴

...  

Typically, the stations were erected in the course of the last century at the limits of the city. Today, those sites may be in the mist of revitalizing metropolitan cores or densifying and diversifying peripheries. Often they include large and unfragmented portions of disused or underused land (most notably because of the relocation of annexed freight yards). ⁵

Despite the foresight in the original planning, the land between the historic city centre and railway station was eventually filled up with new buildings and city blocks. However the railway station and its associated infrastructure could not be easily relocated in response to the city expansion, and the railway infrastructure

⁴ Bertolini, Luca and Tejo Spit, Cities on Rails: The Redevelopment of Railway Stations Areas (New York: Spon, 1998), 15
⁵ Ibid., 39
continues to occupy a large swathe of land in what is now valuable urban city centre. The result is a physical and psychological discontinuity in the urban fabric of the city created by the contrast in function and character between an industrial transportation zone and urban city centre (Figure 4.3 through 4.6). Today, the contrast is even more keenly felt by city residents living in intensely built-up high-rise apartment blocks looking into the vast rail tracks laid on ground. Clearly, an opportunity was missed during city expansion and the railway could be better integrated with the city.
Figure 4.3: Site Analysis
Figure 4.4: Site Analysis
Figure 4.5: Site Analysis
Figure 4.6: Site Analysis
5. PRECEDENCE STUDY
Figure 5.1: Berlin Central Station
The new Berlin Central Station, designed by von Gerkan, Marg und Partner and completed in 2006, like other metropolitan railway stations around the world such as New York’s Grand Central Terminal and London’s King’s Cross Railway Station is a railway station in the city centre of Berlin (Figure 5.1). The railway station is also a transportation hub with cars, buses, underground metro and overhead high-speed rail all brought together in one place on the bank of river Spree. The Berlin Central Station is unique for two reasons: first the underground metro and overhead Intercity Express (high-speed rail) runs perpendicular to each other thereby introduces two competing city axes to the building, and second the intersection and overlapping of the various modes of transportation is resolved using a multi-storey design (Figure 5.2) to segregate each mode of transportation on a different level and to facilitate the transfer of passengers from one level to another (Figure 5.3). Each floor is connected and serviced by a series escalators and elevators taking passengers from one floor to another. Services for the railway station are run inside the floor cavity, and ancillary spaces such administrative offices are located in the two office buildings to each side of atrium.

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6 Meinhard von Gerkan, von Gerkan, Marg Und Partner Bauten (München: Prestel, 2007)
Figure 5.2: Interior Atrium View
Figure 5.3: Section showing vertical circulation
Figure 5.4: Plan
Figure 5.5: A breakdown of the different parts of railway station on plan
The proposed Dandong railway station shares a number of similarities to the Berlin Central Station (to be further elaborated in Chapter 12), and a number of useful design strategies can be observed from the Berlin Central Station:

1. Focus on the creation of place: the Berlin Central Station has an urban and metropolitan atmosphere permeating throughout the building. The large filigree glass roof over the platforms and atrium brought both daylight and the city into the station, and established a visual connection between building, city and nature.

2. Utilize the space inside the building to create a public space for passengers: sandwiched between two office buildings, the crossover and transfer of passages over multiple floors connecting underground metro to Intercity Express above ground creates an exciting labyrinth-like atrium space, making the Berlin Central Station appear more urban and energetic.

3. Use light and transparency to create a dramatic atmosphere inside the
railway station: the sense of lightness is used to balance and counter the massive and imposing rail infrastructure over the building, site and city.

Together these design strategies turned the Berlin Central Station into a unique and engaging place within the heart of Berlin combining utility, function and beauty together in one place.
6. FUNCTIONAL ANALYSIS
Railway stations, like airport and ship terminals, are unique buildings designed specifically as part of a large transportation network that is heavily driven by function and process. Yet at the same time it is both a transient and transitional architecture space serving as both as a node in a transportation network and as a place which Bertolini and Spit succinctly summarized in *Cities on Rails*:

> As a geographic entity, a railway station has two basic, though partly contradictory, identities. It is a node: a point of access to trains and, increasingly, to other transportation networks. At the same time, it is a place: a specific section of the city with a concentration of infrastructure but also with a diversified collection of buildings and open spaces.\(^7\)

In addition to design evaluation of the Berlin Central Station drawn from the previous chapter, the operating principles of a modern railway station can also be observed through a careful analysis of the composition of individual spaces for each function of a railway station (Figure 5.4). The function of a railway station can be abstracted as a linear diagram taking departing passengers from entry of the building to boarding platforms, and vice versa for arriving passengers. During this process the passengers must pass and negotiate through the building in a number of stages.\(^8\) The process begins with arrival at the railway station. Because a

\(^7\) Bertolini, Luca and Tejo Spit, *Cities on Rails: The Redevelopment of Railway Stations Areas* (New York: Spon, 1998), 9

\(^8\) Ibid.
railway station is functionally a transportation hub serving an existing metropolitan area, most passengers would have to take an alternative form of transportation in order to reach the railway station by car, bus, metro, etc. Therefore a railway station has to be well connected with alternative forms of transportation, and often the arrival area is a mini transportation hub in itself connecting passengers to the broader metropolitan area. The arrival area is often located just outside the building with the abovementioned transportation spread around it. The key is a logical and well thought through layout so passengers can quickly and efficiently navigate through the space using both sight and signage.

The next space upon entering the building would be the main passenger hall that provides a number of services to passengers. First and foremost would be providing timing information about arrival and departure for each train using electronic billboards and public address systems (for making announcements). Second, the passenger hall provides ticket sales to the public. A major consideration for space planning is to provide enough queuing space to accommodate passengers so the queue would not obstruct passage and traffic around the queue. This also means providing sufficient crowd calming measures such installation of sound insulation panels at the ceiling, provide natural day lighting and visual contact with the exterior environment, allow for adequate distance between each passenger to create a private space between passengers and avoid feeling squeezed or pushed. Last but not the least, the main passenger hall
has to provide controls and checks ranging from simple ticket checks to more sophisticated immigration and custom controls at international railway stations in order to process passengers before they are allowed to proceed onto the boarding platforms.

The next space after clearing the main concourse would be the boarding platforms where passengers would board or leave as trains continuously arrive and depart. Special consideration needs to be given to facilitate an effective and efficient passenger flow on platforms and avoid collisions or gridlocks between crowds travelling in opposing directions. This is further complicated by the fact that directions of the crowd would frequently reverse as trains arrive and depart. One strategy is to provide multiple point of entry to the platform. Another is to optimize the passenger flow by fixing the arrival and departure flow in one direction. For both strategies to work, arrival and departing passengers have to be separated, ideally on separate levels to minimize mixing of the two.

A railway station also has a number of ancillary spaces attached to the building that provides services to aid the maintenance and running of the main building. One such space is the administrative facilities for running the railway station with offices, meeting and training rooms, lunchrooms, etc. A critical function housed within the administrative facilities is the control room, where the arrival and departure of trains are monitored and co-ordinated. Another important group of ancillary spaces
attached to building are plant rooms providing the various services such as electricity, air, water, lighting, communication, sewage, etc. throughout the building. Often these services are produced in the plant rooms and carried to the various outlets spread throughout the building in concealed ducts and cavities, which need to be easily accessible for maintenance and servicing. Finally, the railway station also has to provide essential public facilities such as toilets, phone booths, etc. catered to both passengers and the general public.

In addition to the abovementioned critical and ancillary spaces described above, railway stations frequently also provide additional commercial facilities built and integrated into the building. Functionally, these commercial facilities provide amenity, retail and advertising opportunities aimed at passengers, and they give passengers a way to fritter away time while waiting in queue or on boarding platforms. Financially, they generate revenue for the railway station based on the volume of traffic and sales passing by these commercial facilities. However, commercial interests need to be balanced with public interests such that these commercial facilities, via strategic grouping and location, would not obstruct the passenger flow, or distract and confuse passengers about directions.

Another critical aspect of planning for a new railway station is to allow for future expansion due to both improved transportation technology and increased demand for travel in the future. The building of a new
Dandong railway station is driven by the ever-increasing trade between China and North Korea as well as the continuation of the gradual opening up of North Korea despite the recent change in North Korean leadership. Furthermore, the high-speed rail would not only be extended into North Korea territory, but could also be continued and extended to South Korea and thus further strengthen the link between China and the Korean peninsula. In short, the new Dandong railway station has to allow for increased rail traffic in the foreseeable future (as elaborated in Chapter 12).
7. URBAN DESIGN
As explained in previous chapters, the railway has played an important role in the development of the city of Dandong similar to other railways in other urban centres around the world:

In the Tokyo region, the train has an astonishing high share of home-to-work trips (75%). In London, with a share of 45% this is more than significant. In the Netherlands, as many as 30% of all train travellers were commuters, 21% were students, while shopping and recreation accounted for only 9% and 8% respectively of all trips by rail.9

As a result of the rapid economic development in the last three decades, a number of major urban and economic centres are established throughout China that draw migrant works from other parts of the country to these centres to find work in various trades. This mobilization of human resources in turn underpins and drives the incredible economic growth that China had experienced since liberalization and reform of markets in the 1980s. However in the spring of each year, people are still expected to celebrate the spring festival 10 with other family members on their ancestral homeland. This demand for travel back to the ancestral homeland elsewhere in the country and then back to the economic

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9 Bertolini, Luca and Tejo Spit, Cities on Rails: The Redevelopment of Railway Stations Areas (New York: Spon, 1998), 31
10 A period of roughly two weeks from the first new moon to full moon during spring. Spring festival is calculated according to the moon calendar and thus various each year.
centres for work creates a unique Chinese phenomenon known as the Spring Move (春运) of people migrating around China during the spring each year. In 2012 alone, more than 3.1 billion cross-country trips are made during Spring Move in buses, coaches, cars, trains and airplanes\(^\text{11}\) in a country of 1.35 billion people. \(^\text{12}\)

The demand of Spring Move in addition to cross border trade and travel to North Korea in turn demands a high capacity transportation mega-structure in order to handle the expected passenger volume during peak demand, and the demand for travel by train will only continue to increase as the Chinese economy continues to grow along with increasing trade with North Korea. The new Dandong Railway Station therefore has to be designed on a large city scale occupying multiple city blocks.\(^\text{13}\) The sheer size of the resulting building would impose a monumentality of its own over the building that overwhelms the city. Consequently the design for the new Dandong railway station also has to deal with the issues of scale in city and how would the new building relate and respond to the city. The issue of scale, however, is a frequent dilemma faced by all developing nations (China included) that the Dutch architect Rem Koolhaas has commented on and

http://zh.wikipedia.org/zh/%E6%98%AF%E8%BF%90

http://en.wikipedia.org/wiki/China

\(^{13}\) In fact, the existing railway station and its associated rail infrastructure already occupies multiple city blocks in the heart of city. See Figure 3.4.
referred to as Bigness in his article Bigness or the problem of Large:

Beyond a certain scale, architecture acquires the properties of Bigness. The best reason to broach Bigness is the one given by climbers of Mount Everest: "because it is there." Bigness is ultimate architecture.

...

One hundred years ago, a generation of conceptual breakthroughs and supporting technologies unleashed an architectural Big Bang. By randomizing circulation, short-circuiting distance, artificializing interiors, reducing mass, stretching dimensions, and accelerating construction, the elevator, electricity, air-conditioning, steel, and finally, the new infrastructures formed a cluster of mutations that induced another species of architecture. The combined effects of these inventions were structures taller and deeper - Bigger - than ever before conceived, with a parallel potential for the reorganization of the

14 Rem Koolhaas, "Bigness or the problem of Large." In Small, Medium, Large, Extra-Large: Office for Metropolitan Architecture, Koolhaas, Rem and Bruce Mau (New York: Monacelli Press, 1995), 495
social world - a vastly richer programmation.\textsuperscript{15}

Koolhaas had realized through his own critical commentary that modern buildings and infrastructures creates and produces a new architecture that transcends what could possibly be built prior to the industrial revolution. The result is a discontinuity of urban form and space, which Koolhaas termed the absence of a theory of Bigness \textsuperscript{16} in sharp contrast to traditional European theories that deal with complexity and importance of urban form and human interaction in the public realm.\textsuperscript{17}

However, Koolhaas had also realized this new architecture arising out of Bigness is also a new opportunity for creating a type of buildings that engages with the city in a fundamentally different way. If anything, Bigness demands more thought and care to arrive at a well resolved architectural design:

\textit{But in fact, only Bigness instigates the regime of complexity that mobilizes the full}

\textsuperscript{15} Rem Koolhaas, "Bigness or the problem of Large." In Small, Medium, Large, Extra-Large: Office for Metropolitan Architecture, Koolhaas, Rem and Bruce Mau (New York: Monacelli Press, 1995), 497-498

\textsuperscript{16} Ibid., 509

\textsuperscript{17} Camillo Sitte, "The Art of Building Cities." In The City Reader, ed. by LeGates, Richard and Frederic Stout (New York: Monacelli Press, 1995), 476
intelligence of architecture and its related fields.\textsuperscript{18}

... 

Bigness destroys, but it is also a new beginning. It can reassemble what it breaks ... Only Bigness can sustain a promiscuous proliferation of events in a single container. It develops strategies to organize both their independence and interdependence within a larger entity in a symbiosis that exacerbates rather than compromises specificity.\textsuperscript{19}

The design for the new Dandong Railway Station therefore takes on the challenges of designing a functionally complex transportation mega structure by addressing the issues of scale in addition to the deficiencies identified during analysis of the existing city fabric using concepts of transition and gate to illustrate the nature and purpose of travel and the importance of place. To do this, urban design ideas are used in siting and are used to resolve the relation of building to city. First the northeast and southwest side of the city is reconnected and a new city axis re-established by lifting the rail tracks above ground (Figure D). Second excess land is returned to the city for future development and to create new open spaces (Figure H and I). These new developments can in turn

\textsuperscript{18} Rem Koolhaas, “Bigness or the problem of Large.” In Small, Medium, Large, Extra-Large: Office for Metropolitan Architecture, Koolhaas, Rem and Bruce Mau (New York: Monacelli Press, 1995), 497

\textsuperscript{19} Ibid., 511
would turn the city district immediately around the railway station into a new business and commercial hub focused on serving travellers by proving hotels, convention centres, offices, etc. that integrates with the rest of the city. Third, the new railway station responds to the city environment by bringing the building and city together visually and functionally into a continuous and functional whole and at the same addresses the issue of Bigness Koolhaas described by utilizing the concepts of transition and gate (as elaborated further in the chapters titled Transition and Gate separately in this thesis). Transition is used to relate the verticality found in the high-rise buildings surrounding the railway station (Figure 8.6), and it is reflected in the randomly distributed structural frames, colonnade (Figure K and Location 22) and carvings on the ground plaza (Figure I and Location 21). Similarly gate is employed as a sculptural device using the structural frames distributed along the railway running through the city and bridge (refer to Drawing 1). The structural frames vary in length, width and spacing accordingly (Figure C) forming part of the cityscape in response to the high-rise buildings (Figure F). Furthermore the structural frames are featured as a gateway on the Chinese and North Korean border, and the density and spacing of framing intensifies at the station to signify the arrival at new Dandong railway station (Figure E).
8. TRANSITION
Transition can be literally understood as the crossover from one place to another. Railway stations are inherently transitional spaces existed solely for the transportation of passengers from one destination to another. Consequently passengers are not expected to dwell in such types of buildings. Instead they come to this place in order to make journeys to another place. Railways stations are therefore transient spaces marking the start or end a journey.

Transition in railway stations can occur on many different scales from the crossover from city to railway station, from public to sequestered area, from one space to another, from one floor to another, and it can even occur over the threshold between platform and train. Therefore the composition and arrangement of each spatial component of the new Dandong railway station has to be carefully considered in relation to each other in order to capture and articulate the transient nature of such transitions.
One approach would be to consider the phenomenal transparency of spaces. In their seminal essay *Transparency: Literal and Phenomenal* Rowe and Slutzky identified two modes of transparency: literal and phenomenal. Literal transparency is found in the *inherent quality of substance*\(^{20}\) manifested through the physical material properties of glass, plastic, etc. Literal transparency therefore would break down the visual barrier between spaces as is evident in the trend to produce architecture with transparent facades (Figure 7.1 and Figure 7.2).

---

Figure 8.1: Mies van der Rohe, Office Tower Project, Friedrichstrasse, 1922
Figure 8.2: Toyo Ito, Sendai Mediateque, Sendai-Shi, Miyagi, 1995-2001
Yet as Rowe and Slutzky speculated, there can be a richer and more dynamic interplay between spaces, through manipulation, that creates ambiguity in surface, form and space that offers multiple readings through multiple points of view. Transparency in space (as opposed to material) can therefore be seen in the inherent quality of organization\textsuperscript{21} of space which Rowe and Slutzky termed phenomenal transparency and which Rowe illustrated using Le Corbusier’s villa at Garches. Like a cubist painting (Figure 7.3), everything element on the building façade can be broken down into successive layers (Figure 7.4) to suggest horizontality of internals spaces on each floor as expressed by the horizontal strip windows, horizontal strip walls, recessed penthouse and protruding balcony over the flat, streamlined building façade (Figure 7.5). The suppression of depth over the building façade further amplifies and heightens the sense of horizontality. Inside the villa, however, it quickly becomes apparent that the interior spaces are dominated by a hidden vertical circulation system cutting through voids and floors that rises through the floors. Le Corbusier had in effect turned each floor plate into another plane for projection like the cubist painting. The result is a collision and infusion of two separate and opposing grids cutting across the building volume, creating multiple points of reference inside the building which the interior spaces can be read and understood, and in the process creates an ambiguity in space where both horizontality and verticality can be

\textsuperscript{21} Rowe, Colin and Robert Slutzky, \textit{Transparency} (Boston: Birkhäuser Verlag, 1997), 23
simultaneously experienced through surface, volume and interaction of light and shadow within the building. Consequently, phenomenal transparency arises wherever there are locations in space which can be assigned to two or more systems of reference - where the classification is undefined and the choice between one classification possibility or another remains open. 22 Phenomenal transparency therefore produces a richer and more dynamic interplay between spaces, which Rowe and Slutzky wrote:

Denied the possibility of penetrating a stratified space which is defined either by real planes or their imaginary projects, the observer is also denied the possibility of experiencing the conflict between a space which is explicit and another which is implied. He may enjoy the sensation of looking through a glass wall and thus perhaps be able to see the exterior and the interior of the building simultaneously; but in doing so he will be conscious of few of those equivocal sensations which derive from phenomenal transparency.23

23 Rowe, Colin and Robert Slutzky, Transparency (Boston: Birkhäuser Verlag, 1997), 43
Figure 8.3: Transparency, painting showing stratification on page 60
Figure 8.4: Transparency, axonometric drawings of Garches on page 61
Figure 8.5: Transparency, elevation of Garches on page 36
Equally when phenomenal transparency is present in transitional spaces, such spaces become imbued with multiple possibilities for directions and movement through space and time where each route intersect, overlap and inextricably interweave\textsuperscript{24} with one another. This is achieved in two ways in the design for the new Dandong railway station. First, as alluded to in the previous chapter regarding the relationship of the railway station to city, the new building is superimposed over the city and re-interpreted in terms of directionality and composition of space (Figure 7.6, verticality of city in red and horizontality of railway in blue). As a result, elements of the city are brought into the railway station and expressed as randomized structural frames that respond to and engage with the city (as elaborated in the previous chapter on urban design). Second, much like Le Corbusier's villa at Garches, there is a concealed vertical circulation running perpendicular to the horizontal rail tracks and boarding platforms (as elaborated in Chapter 12). This vertical circulation is enabled by the stacking of various functions of the railway station over multiple floors. The constant ascending and descending from floor to floor creates the necessary conditions for intersection and overlapping of the two modes of circulation within the building. As a result, many routes are possible that offer multiple points of view inside the railway station and make possible multiple readings of nature, building, city and place through the layering of various elements. Like

Le Corbusier’s villa at Garches, each layer of surface adds a complexity and richness to the composition of internal spaces through contradiction in either real or imaginary planes, and in the process constructs a successive sequence of spaces taking passengers on a journey of discovery (Figure J, K, N Q and R).
Figure 8.6: Montage of railway over city, verticality in red and horizontality in blue
Moreover, literal transparency of material has also been employed to compliment phenomenal transparency of space in the design of the new Dandong railway station using transparent glass façade over the building (Figure I). By eliminating the visual barrier between inside and outside, the innards of railway station are made visible and transparent to the surrounding city. The image of opening up is decidedly distinguished from the solid and enclosed impression of previous railway stations built on site (Figure 2.1, 2.2 and 2.4). The transparent glass façade is used to convey progress and aspiration of the city for the twenty-first century. Conversely, the city and nature is also made visible from within the railway station (Figure S). The images of high-rise buildings, sky and Changbai Mountain and the interplay between void and solid, materiality, light and shadow are brought together to form a unique experience of place (as elaborated in Chapter 10) that distinguishes the railway station in a high-speed, globalize rail network connecting China to North Korea.
9. GATE & THE WORK OF ART
In his essay on The Origin of the Work of Art, Heidegger traced both the visible and innate qualities that turn certain objects into exceptional and transcendental work of art. He began by observing that a work of art was created by the artist for a particular purpose and to be placed at a particular place from the very beginning. Therefore to understand and appreciate a work of art requires the object to be viewed, considered and judged according to the artist's original intentions. The meaning and significance of the object is lost when a work of art is removed from context as Heidegger postulated the effects of removal:

> However high their quality and power of impression, however good their state of preservation, however certain their interpretation, placing them in a collection has withdrawn them from their own world. But even when we make an effort to cancel or avoid such displacement of works ... the world of the work that stands there has perished.  

Clearly, Heidegger considered a work of art is related to the context to which it was originally created. Heidegger also noted that a work of art is stimulating and moving precisely because it instigates responses from the viewer. The artist was merely a vehicle through which it was first conceived, created and expressed.

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Next, Heidegger considered the visible and critically the innate qualities of a work of art in order to gain an insight to the object. Was a work of art magnificent, Heidegger asked, because it has been beautifully crafted by the artist? Or was it induced by some other physical characters such form, colour or material? Using a Greek temple as an example (perhaps Heidegger has The Parthenon at the acropolis of Athens in mind), Heidegger traced and deduced its significance by examining the purposed it serves and the emotions it arouses:

"A building, a Greek temple, portrays nothing ... By means of the temple, the god is present in the temple. This presence of the god is in itself the extension and delimitation of the precinct as a hold precinct ... It is the temple-work that first fits together and at the same time gathers around itself the unity of those paths and relations in which birth and death, disaster and blessing, victory and disgrace, endurance and decline acquire the shape of destiny for human being."  

Heidegger noted that it was not the sheltering function of the building that gave meaning and significance to the temple. Instead it was the ceremony, emotions, memories, and symbolic functions of the temple that turn it into a work of art that was incorporated into the lives of ancient Greeks. Or more generally, a work of art became exceptional and transcendental when it reveals and

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conveys truth, meaning and how it relates to Being to the viewer, as Heidegger explained:

> To be a work means to set up a world. But what is it to be a world? ... World is never an object that stands before us and can be seen. World is the ever-nonobjective to which we are subjects ... keep us transported into Being.\(^{27}\)

Following Heidegger’s logic presented in *The Origin of the Work of Art*, the design and construction of a new railway station is conceived as a work of art. But first it has to be located, and the new railway station is placed at Dandong, the frontier of Chinese city on the border to North Korea. Separated by the Yalu River, the bridge crossing at Dandong is the only land crossing connecting the two counties by land. Thus the new Dandong railway station, located on the Chinese side of bridge, can be literally interpreted as the gate on the Chinese border through which the bridge reaches across the river into North Korea. A gate implies an opening connecting two worlds, and it is therefore a metaphor for transient space. In this case, the new Dandong railway station is a transient space designed specifically for travelling between the two counties by train.

The railway station is therefore conceived as a transient space, and the concept of gate is expressed in three ways in the design. First, the gate is marked with evenly spaced

structural frames along rail tracks to represent the gate according to the Chinese character for gate (Figure 9.1) and therefore can be literally interpreted as a gate to be framed appropriately (Figure 9.2). By framing the tracks, travellers are made aware of the arrival and departure to the city of Dandong by the alternating views of city and station, solid and void, light and shadow. The density and spacing of framing intensifies at the station to signify the arrival at Dandong station. Moreover, the alternation and intensification establishes a rhythm that helps to create an exciting and theatrical atmosphere for travel.
Figure 9.1: Chinese character of gate
Figure 9.2: Cross section of building showing gate
Second, the railway station itself can be thought of as a gate. In fact, the sole purpose of the building is to move people from one place to another. The railway station is merely the sum of its various functional parts combined to achieve such goals: the passenger hall to process passengers, the platforms to transfer passengers, etc. Consequently, passengers come to such place in order to travel to elsewhere, or conversely arrive from elsewhere to such place. Therefore the railway station serves as a gate, and the gate is expressed by the land the building occupies, the vast infrastructure built to serve the railway station, and a series of structural frames hovering over the elongated platforms and trains.

Last but not the least, the railway station performed as a gate by simultaneously merging building, city and nature together that can only be seen, understood and identified with Dandong when standing on the boarding platform and looking through gaps in the structural frames seeing miles of Changbai Mountain disappearing into clouds, city arising from the ground on the bank of Yalu River, and light filtering through the structural frames with cast shadows. The gate therefore uniquely identifies a place and such space can only be understood and experienced at Dandong.
10. GATE & CRITICAL REGIONALISM
The design of a new modern railway station also raises questions about the identity of the building in relation to the city, especially one that has also underwent its own significant development and transformation in the past. In his essay *Towards a Critical Regionalism: Six Points for an Architecture of Resistance*, Frampton began by addressing the paradoxical phenomenon of *universalization*\(^\text{28}\) that renders every experience of modern life undistinguishable through the ubiquity application of modern technology and consumption of a homogeneous (western) culture and lifestyle throughout the developed world. In turn, the indigenous culture and values that make each place unique the lost in the process of modernization. This interpretation of universalization is particularly pertinent to the design of the new Dandong railway station because railway stations belong to a ubiquitous category of buildings placed everywhere in the world where the population is serviced by train. The danger, as Frampton warned in his article, was the mindless replication and repetition of a building type across all such sites, i.e. the triumph of universalization over culture by ignoring the intricate and subtle qualities of place. This critique of mass production was especially applicable to the rapidly expanding Chinese cities during the past three decades.

To counter this ruthless and destructive development and expansion of modern cities, Frampton formulated a strategy by employing Critical Regionalism, initially...

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advanced by Alex Tzonis and Liliane Lefaivre, as a strategy for dealing with the complex reality of building in the modern world:

The fundamental strategy of Critical Regionalism is to mediate the impact of universal civilization with elements derived indirectly from the peculiarities of a particular place ... It may find its governing inspiration in such things as the range and quality of local light, or in a tectonic derived from a peculiar structural mode, or in the topography of a given site. 29

To illustrate his point, Frampton used site preparation for building as an example to compare and contrast the two differing philosophies of universalization and Critical Regionalism. Current practice and technique of bulldozing turns the site into a flat topography ready for construction. However by bulldozing the site flat, the site is rendered placelessness 30 and the building sits on a stale and undistinguished land. In contrast, Critical Regionalism sought to build the site, 31 to quote the Swiss architect Mario Botta, by working with local topography that is responsive to local conditions, and at the same time retains the peculiarities of site. Similarly design for buildings could respond to local context, climate, light,

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30 Ibid., 26
31 Ibid., 26
tectonic form, etc. to convey and impart unique characteristics in buildings that resists the universal and pervasive application of modern technology and techniques. To summarize the strategies employed by Critical Regionalism, Frampton wrote:

>Critical Regionalism necessarily involves a more direct dialectical relation with nature than the more abstract, format traditions of modern avant-garde architecture allow."\(^{32}\)

The new Dandong railway station is first conceived as a gate as suggested in the previous chapter, but the design also employs the same design strategies advanced by Frampton in his essay on Critical Regionalism by considering topography, context, climate, light and tectonic form. For example the platform is raised above ground to avoid flooding on the bank of Yalu River, and the resulting uplift of the platform creates a transition space between ground and platform above. Likewise, the structural frames not only hold the building up, it is also used to establish a connection between passenger, building and city and mark the arrival and departure of trains. Through the gaps between the structural frames, images of city and nature are brought into play inside the building volume to create an exciting and dynamic atmosphere for travel. Critical Regionalism therefore

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compliments and enhances Heidegger’s concept of a work of art. Specifically, Critical Regionalism found expression in the third interpretation of the design concept of gate: in addition to the simultaneous merging of building, city and nature, it is the local conditions reflected through context, climate, light, etc. that gives expression to the creation of a unique railway station building placed in the Chinese frontier city Dandong. This in turn makes a memorable and lively city for travelling, trade and living on the border between China to North Korea.
11. CONCEPTS
The new Dandong railway station is originally conceived and developed from concepts of urban design, transition and gate as elaborated in previous chapters concerning these concepts. These concepts, however, do not exist in isolation. Instead they compliment and reinforce each other. For example, the structural frames are used a metaphor for gate, which in turn is used as sculptural device to engage with the city. Likewise the rail tracks and platforms are raised above ground in response to deficiencies identified during the initial site and urban analysis, which in turn is also used as a horizontal element (derived from direction and movement of trains) for the composition of internal spaces using phenomenal transparency as a method of organizing transitional spaces.

A journey requires the movement of the body in space and time from one location to another, and passengers would come to the new Dandong railway station in order to make journeys from one place to another. Consequently the ideas of transition and gate are used to express a transient architecture placed on the border of China and North Korea. Understood in such a way, gate and transition are thus metaphors for the celebration of travel that evokes a sense wonder and excitement about the next destination. This is a work of some proportion and weight and weightlessness that turns the enclosure of platforms, railways and trains into an urban cathedral that symbolizes openness (in fits and starts for both China and North Korea), progress and optimisms for what is to come. Such expressions are partly driven by the rapid
economic development and expansion that the city is currently undergoing, and partly by the success generated through reform, trade and dialogue with the outside world. The new railway station therefore becomes the embodiment of these ideals and expresses them through architecture.
Drawing 5 Second Floor
Facilities & Waiting Lounges

5 Waiting Lounge
6 Bridge
Fourth Floor
Administration Office

Third Floor
Administration Office & Meeting Rooms

Second Floor
Facilities & Waiting Lounges

First Floor
Security & Platforms

Ground Floor
Accessible Floor

Drawing 8 Axonometric
Figure A: Bird’s Eye View
Figure B: Bird’s Eye View
Figure C: Structural Framing
Figure D: New City Axis
Figure E: Bird’s Eye View
Figure F: Street View
Figure G: View from train carriage
Figure H: Plaza
Figure I: Plaza / Exterior View
Figure J: Drop Off along 7th Longitude Street
Figure K: To Customs & Security (from Plaza)
Figure L: To Customs & Security (from Main Hall)
Figure M: Main Hall / Ticket Sales
Figure N: Ground Mezzanine / Main Hall below
Figure O: Customs & Security / To Waiting Lounge
Figure P: Waiting Lounge / Train Platform below
Figure Q: Waiting Lounge / Office above
Figure R: Train Platform / Waiting Lounge above
Figure S: Train Platform / Towards Building Exit
Figure T: Office / View of Train Platform below
12. FUNCTION & PROCESS
To make an efficient crossing over the border between China and North Korea, the existing rail tracks are run perpendicular to the Yalu River. The new Dandong railway station retains this configuration and is sited parallel to the tracks so trains can stop for passengers before continuing onto the bridge over the river crossing. The railway stations provides for a total of eight rail tracks. Two of which are express rail tracks travelling straight through the building without stopping at the railway station. The other six rail tracks, served by three train platforms are temporary stops for trains. Trains would diverge from the two express rail tracks, make a stop at the railway station for passengers, and then return to the express rail tracks for the next lag of the journey. At the moment, the two express rail tracks runs over the existing bridge crossing the Yalu River. With the reconstruction of the second bridge (currently in ruin), more express rail tracks can be built and operated to allow for increase traffic in the future. As a consequence, the railway station acquires a rectangular and linear form, and together with the rail tracks, expresses horizontality in the direction of travel within the urban city space.

On both side of the railway station are two urban plazas facing the northeast and southwest side of Dandong respectively. The urban plazas is a transportation hub immediately next to the railway station where various transportation networks are brought together with car parks, bus stops, taxi lanes, and drop off points. This transportation hub is crucial for the passengers trying to find the right transportation to the next destination, and
for the various vehicles to stop temporarily to load and unload passengers and baggage. The urban plazas are casted in random streak patterns that acknowledge the same verticality expressed by city and structural frames hovering over the railway station. In effect, the urban plazas attempts to turn a vast and open concrete and asphalt paving into an urban area that resonates with its immediate surrounding, and in process setup a transition zone between city and railway station that is populated by transitory passengers departing and arriving at railway station.

For historical reasons, the existing railway station was sited perpendicular to the Yalu River occupying multiple blocks of land within the densely occupied city, thus physically dividing the city in halves. As indicated during the initial research and feasibility study on the railway station, there are currently a number of social and economically critical zones and several strategic traffic routes around the site that would benefit from reconnecting with the other end of city. The design for the new Dandong railway station therefore takes a number of strategies to physically re-integrate the railway station and its associated infrastructure back into the city fabric. First, the train platforms are lifted above ground so that traffic flow is re-established on the ground floor. This opens up a number of direct road connections that streamlines the flow of traffic across the city, and breaks down a physical barrier to the development and integration of city. Second, due to the transit nature of travelling by train, the entire ground floor is transformed
into a hybrid of transportation hub (made more convenient by the direct road connections) and public plaza. Passengers would navigate and negotiate through this space and find other modes of transportation such as cars and buses. Third, the scheme would free up additional city blocks for re-development around the railway station into mixed residential, commercial and recreational areas that would benefit from proximity to the railway station, and yet still has plenty leftover for public space and for the transportation and logistics of travel to function properly around the railway station. One of the reasons the existing site felt so out of scale with the surrounding city environment is due the vast amount of the land that the railway station currently occupies, and allowed to be unused in an otherwise densely developed city. By freeing up available land, new development opportunities are made possible that could turn the site into a unique urban area within the city. As the new Berlin Central Station cited in the case study has demonstrated, a major transportation hub is certainly possible in a densely packed urban environment with abundant movement and even leisure space through careful design. Certainly the increased utilization and intensification in land use further contributes to the build-up of a rich and developed urban environment in Dandong. Last but not the least, the design concepts that drive the development of the new railway station contributes to the creation of a unique place in the city and help blend the railway station with the surrounding urban environment.
The design for the new Dandong railway station is founded on the concepts of urban design, transition and gate as described in the previous chapter. These architectural concepts recognize the scale, location, function and the tactical importance of the new railway station in connecting China to North Korea on rail over the Yalu River. Although the design for the new Dandong railway station is first conceived and developed from these architectural ideas, the actual planning and layout of the various functional spaces however is driven by the principle of making the process of travel as simple and straightforward as possible. This can be best illustrated and explained by the journeys made by passengers through the building. For departing passengers that means arriving at the railway station, getting processed before finally allowed to board on a train. For arriving passengers, that means arriving at Dandong and getting off a train, finding transportation and leaving the railway station. As a result of such planning, a continuous flow of passengers goes through the railway station each day and architecture is experienced by moving through the building while passengers are in transit.

The process of travel begins with arriving at the railway station, and the space immediately around the ground entry to the building become a hybrid of public space and transportation hub (Figure H and I, Location 19, 20, 21, 22, 23 and 24) in which the railway station is connected to the rest of the city by car, bus, and taxi (Location 19, 20, 23 and 24). The transportation hub necessarily occupies large amount of land both because each mode of land
transportation has its own complex network and schedule, and because such space needs to accommodate large volume of traffic that reaches peak volume during Spring Move in spring. The main road running across the underside of railway station has two express lanes forming a new city axis (Figure D) and two side lanes for dropping off passengers immediately next to the ground entry (Figure J and Location 24). Ground entry to the building is easily recognizable because the dominant presence of the railway station in the surrounding environment and the transparent nature of building façade leading departing passengers visually to the processing facilities on the ground level.

The passenger hall, placed on the ground level, is opened on all side to the public area and transportation hub immediately surrounding the railway station (Figure M and N, Location 27). The passenger hall is deliberately placed on the ground floor to both facilitate access to the building and emphasize the public nature in this part of building. This is where enquiring, queuing, buying tickets, welcoming and farewell occur, i.e. where the private emotions of passengers are on full display in public. Therefore the passenger hall is imagined to be a buzzing and energetic high volume space inside the railway station (Figure M). The passenger hall has rows of processing booths to serve passengers, dedicated waiting areas, information display and other public facilities such as toilets. Note there are actually two passenger halls on each side of road on the ground level. This is necessary to
handle the large anticipated number of passengers both quickly and efficiently.

After buying tickets, passengers move onto either one of the two immigration and customs areas located on each side of railway station at the mezzanine level above (Location 8), which performs mandatory functions such as processing passengers crossing the Chinese and North Korea border and checking baggage for dangerous and illegal goods (Location 7). Because the segregated nature and function of immigration and customs, this area acts as a physical separation between the public passenger hall below and the more restricted train platforms above. While the immigration and customs maintains visual contact to the public passenger hall below and city outside, it's confined to an in-between level between public and segregated parts of the railway station. Spatially, the immigration and customs area acts a compression device that builds up anticipation to be release when passengers finally clear immigration and customs and enter into the spacious, transparent, and uplifting waiting and lounge level above (Figure O).

After clearing immigration and customs areas, passengers are transferred onto a waiting and lounge level above the actual boarding platform (Location 5). The waiting and lounge level perform four useful functions for departing passengers. First, it is a device for transferring passengers horizontally over the rail tracks and directing passengers the appropriate train waiting on a particular boarding platform. Second, because the waiting and lounge level is
raised above the rail tracks, it provides an instant glance and a broad overview of the entire platform space so passengers can decide where to go (Figure P). Third, it provides leisure and wandering space (Figure Q) for passengers to explore and experience the internal space while waiting for departure. Last but not the lease, it gathers departing passengers at a place that is physically separate from the boarding platforms, thus separates departing passengers from arriving passengers (as further explained below) to facilitate the smooth and efficient operation of the railway station. Spatially the waiting and lounge level blends in together with the boarding platforms below to form a long and slender volume. When a train is ready for departure, passengers would leave the waiting and lounge areas and descend onto the appropriate platform for boarding (Figure R and S, Location 9).

It is important at this point to reiterate the reasons for placing the rail tracks above ground. First because the city of Dandong is literally built on the flood plain on the bank of Yalu River, lifting the rail tracks above ground avoid the infrequent flooding and therefore limit damages to the critical transportation infrastructure connecting China to North Korea. Second, this is done to open up the ground level so the city on each side of the railway station as it currently exists can be re-connected and joint together. For these reasons, the railway station necessitates a vertical movement in each step of the process.
For arriving passengers, the process of travel begins when arriving at the railway station by train. Crucially, arriving passengers would leave the boarding platforms by heading in the opposite direction of the waiting and lounge area, and towards the exits at each end of the building (Figure S and Location 11). Because the passengers have already been cleared by immigration and customs elsewhere before boarding the train, passengers can descend directly to the exit on the ground floor (Location 25 and 29) in a non-reversible direction. It is here that passengers leave the restricted part of railway station and arrive at the public area again (Location 22 and 24). Once arrived on the public side, passengers are free to engage and navigate through urban plaza and transportation hub to find the appropriate transportation to complete the last lag of their long journey before arriving home. The new Dandong railway station is, in essence, kept in constant operation by managing this continuous flow of departing and arriving passengers by operating the various parts described above.
In addition to the spaces mentioned above, there are a number of miscellaneous spaces such as plant rooms, offices, public facilities and retail spaces that supplement and support the operation of railway station. The plant room is deliberately placed underground (Location 32) both to isolate the heavy-duty plant and equipment away from passengers and to free up valuable space above ground. Services such as electricity, water, air, etc. are distributed up the vertical cores together with lifts and stairs and then distributed horizontally and throughout the building in floor cavities and ducts. Another critical service provided by the building is the public facilities such as toilets. They are located strategically throughout the building for each individual functional space to account for the movement of passengers moving from one part of the building to the next. Similarly office area for staff is deliberately placed above the platform to both isolate and free up valuable space on the ground and platform level (Figure T, Location 1, 2, 3 and 4). The office area has open plan office areas, individual offices, meeting rooms and critically monitoring stations so the railway station and associated railway infrastructure can be run smoothly and efficiently. Retail spaces, on the other hand, are spread throughout the railway station at strategic locations (Location 5, 6, 13, 16 and 26) that introduce opportunities to shop and spent time while waiting, yet at the same avoid hindering the flow of passengers and confusing passengers passing through.

Because the railway station relies on a vertical circulation to function, a number of devices are employed to assist
the transfer of passengers up and down the various levels inside the building. The main strategy is to transport passengers quickly and efficiently using multiple escalators between each floor. For passengers carrying heavy baggage or having difficulty using escalators, numerous elevators are available. The elevators are grouped into clusters of two or three elevators layout in a bank, and they are positioned to at the edge of building envelope or platform space in order to minimize obstructing the main circulation flow of passengers inside the building. Finally, there are number vertical service cores containing emergency fire escape staircase spread evenly throughout the building to be used as emergency exits. The vertical service cores also contain vertical ducts carrying services from the plant room located at basement to each floor. The various vertical circulation devices combine to transport passengers vertically around the building and maintain the efficient operation of the railway station.

Given the linear process described above, the organization of space inside the train is arranged and stacked vertically rather than horizontally for functional reasons mentioned previously. This transformation of space in a vertical composition, even when following a logical and linear process, results in a series of ascends and descends through the various layers and floors inside the building volume, and creates and reinforces its own experience of a journey inside the building. This experience of a journey in turn imparts and enhances the atmosphere of travel inside the building (Figure O),
making the new Dandong railway station both memorable and unique.

It is important to note while the design for the new Dandong railway station is heavily process driven, there are numerous opportunities at various locations for the building to make architectural statements and influence the experience of passengers throughout the process. For departing passengers, that means making an impression on first arrival at the railway station (Figure I). Another opportunity exists after clearing immigration and customs, where passengers arrive at an isolated and segregated juncture suspended in space while waiting to board a train (Figure P). Likewise for arriving passengers, that means making an impression upon arriving on the train platform (Figure S), where building, city and natural are simultaneously seen at once. Finally for both departing and arriving passengers, the physical presence of structural frames over railways and building construct the experience of an alternating sequence and signal the departure and arrival at the railway station (Figure G). By identifying and utilizing such opportunities presented in an otherwise process oriented building, the new Dandong railway station expresses ideas about epoch, travel, culture and place through architecture.


