

# PT BLINK MANUAL



09 November 2016

## Recommended Construction Processes and Safety in Design Brief

This manual provides Licensee's and Principal Contractors with Pt Blink Safety in Design Brief and recommended processes for utilising Pt Blink technology systems for the construction of high-rise buildings

## AMENDMENT REGISTER

Ed/Rev Number	Section Number	Description	Date
V1		Original Concept Design	9 Nov 2016
V2	Whole Document	Outline of safety in design report and installation steps	10 Nov 2016
V3	Whole Document	Refined engineering accuracy and improved hazard highlights and readability	15 Nov 2016
V4	Whole Document	Draft for consultation	18 Nov 2016
V5a		Version created for consultation with Workplace Health and Safety Queensland	22 Nov 2016
V6	Work at Heights	After discussions with Mark Houston and Peter Stevens of Workplace Health and Safety Queensland on 23/11/16, updated in response to feedback.	24 Nov 2016
V7	Work at Heights	After a site visit by WHSQ Inspector, updated Work at Heights risk management recommendations, due to his interpretation of scaffold work requiring to be undertaken by a scaffolder, which is the 120mm high handrail edge protection and while this manual did not go into specifics of 'rescue at height' listing the Inspectors direction to improve this.	7 December 2016

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# Pt Blink Manual

## RECOMMENDED CONSTRUCTION PROCESSES AND SAFETY IN DESIGN BRIEF

### HOW TO USE THIS MANUAL

This manual has been prepared to generally inform users of Pt Blink Limited (Pt Blink) technology systems in the construction of buildings. The manual provides information on the “**Safety in Design**” of the structure and processes for assembling the structure. In addition to this manual, there are Appendixes for any site-specific matters. While this manual provides all essential detail and references to other sources of information, users of this manual should fully familiarise themselves with the section titled ‘Systems of Work’, which details the assembly process.

### SCOPE

This Manual covers those elements of the structure that use the Pt Blink technology systems and the components of the building constructed under licence where Pt Blink technology systems are used. It is not intended as a manual for the construction of the total building project. The Safety in Design elements of this manual are prepared for the purpose of accompanying the project Safety in Design Report.

### DESIGN ASSUMPTIONS

The design assumptions include:

- That the structure below, adjacent and above the sections using Pt Blink technology systems have been designed and constructed for the purpose of supporting, complementing and/or tying in the Pt Blink technology system and components.
- That this manual is read in conjunction with supplied engineering drawings, specifications, relevant referenced legislation, standards and codes of practices, as well as all other information and advice provided to the project by Pt Blink and the project designer.
- That this manual is read in conjunction with the specific project Site Safety Plan.

### PRINCIPLES

Pt Blink believes and adopts the following principles in the design and use of their technology systems:



**SAFETY AND WELLBEING**  
OF ALL PERSONS INVOLVED IN THE USE AND  
APPLICATION OF PT BLINK IS PARAMOUNT

- The Safety and Wellbeing of all persons involved in the use and application of Pt Blink is paramount
- Pt Blink technology systems have been developed to reduce hazards and risks associated with construction, for example:
  - Reducing Manual Tasks risks
  - Reducing Working at Height risks
  - Reducing worker exposure to UV radiation
  - Reducing exposure to silicates associated with stripping formwork and subsequent preparing concrete surfaces
  - Reducing risks associated with post tensioning concrete
  - Improving the wellbeing of construction workers through the reduction of risks and reduction of noise and dust.
- Pt Blink technology systems contribute to a productive and cost effective structure for construction.
- Pt Blink technology systems improves the livability of neighbouring properties during the construction phase through the reduction of:
  - Noise associated with formwork, in particular, assembly and stripping
  - Reducing dust
  - Reducing traffic associated with delivering materials
  - Reducing the construction time

## CERTIFICATION & TESTING

Refer to the attached PTB-ST-03 In Plant Testing

Refer to any attached certifications



## ROLES OF PARTIES

Pt Blink is responsible for the design and application of its technology systems to assemble and construct that part of the structure so designed by the Building Designer and installed by the Licensee.

The Licensee is responsible for applying the technology system and constructing the designed componentry on site. The Licensee is responsible for supplying identified safety systems and accompanying safety devices, plant or equipment. Please refer to the Licence Agreement for all relevant detail. The Licensee must ensure an appropriate number of licensed riggers are engaged in assembling the Pt Blink componentry. While a basic riggers licence will meet the requirements of assembling Pt Blink, it is recommended that the workers have additional training and information on assembling Pt Blink componentry and that consideration is given to workers holding a higher level rigging licence. The Licensee is responsible for collaborating with the Principal Contractor to establish and practice fall recovery techniques for high risk licensed work.

The Principal Contractor is responsible for the Site Safety Plan, monitoring all activities on site, in particular, those activities that are likely to impact or be associated with the Pt Blink technology system. The Principal Contractor is responsible for identifying and placing all amenities required on relevant floors/levels under construction, such as toilets, fresh cool water and temporary power, in line with sequencing and project timings. Emergency access/egress to all floors is the responsibility of the Principal Contractor, as is the practicing of any fall recovery procedures in collaboration with the Licensee for high risk licensed work.

## SUMMARY OF HAZARDS

The following is a summary of atypical hazards associated with Pt Blink technology systems and that part of the structure. This summary does not include typical hazards associated with constructing the structure, including the Pt Blink structural component.

- Working at Height – in particular, Placing the Self Locating Loading Pin & Affixing Bracket Bolts.
- Pinch hazard where the panels connect to the columns.
- Working under heavy objects.



FIGURE 1 SELF-LOCATING PIN BRACKET ASSEMBLY



**Warning: Working at Heights, Pinch Points and Working Under Heavy Objects**

## SUMMARY OF CONDITIONS

To ensure the structure may be safely constructed, this manual only relates to that particular design and components of the structure designed by Pt Blink.

## PRE-DESIGN PHASE

### Purpose of the structure

The purpose of the Pt Blink component of the structure is to construct floors above ground level. These floors will typically become residential or office accommodation, containing open space, bathroom facilities, kitchens, balconies and access/egress to stairs. The Pt Blink technology system and components is not the whole structure and is typically integrated into the overall construction project.

### Workplace hazards and relevant legislation, codes of practice and standards



#### **Hazards:**

The atypical hazards associated with Pt Blink's design and components have been identified as:

- Pinch points where the floor pans engage with the columns
- Working at height risks, in particular, inserting bolts to fasten the floor pans.

The following legislation and Codes of Practice have been considered and risk controls recommended in the task steps detailed in this manual. While Pt Blink has been guided by the legislation and codes of practice, there are also obligations on the Licensee and Principal Contractor for the installation and assembly of the Pt Blink components for the structure.

## Legislation and Codes of Practice:

Depending on the Australian State the construction project is being undertaken, the following applicable and current version of State laws, Codes of Practice and accompanying Australian Standards are utilised to guide Pt Blink on compliance obligations and best practice. This manual was guided by the WHS harmonised laws, utilising the Queensland jurisdiction. The below suite of legislation and Codes of Practice are recommended to the Licensee and the Principal contractor.



- Work Health and Safety Acts and Regulations.
- Electrical Safety Acts and Regulations
- Building Code of Australia
- How to manage work health and safety risks Code of Practice
- Safe design of structures Code of Practice
- Steel construction Code of Practice
- Managing the risk of falls Code of Practice
- Hazardous manual tasks Code of Practice
- Welding processes Code of Practice and associated advisory standard
- Managing the risks of plant in the workplace Code of Practice
- Managing the work environment and workplace facilities Code of Practice
- Tower Crane Code of Practice
- Mobile Crane Code of Practice
- Concrete pumping Code of Practice
- Scaffolding Code of Practice
- Traffic management for construction or maintenance work Code of Practice
- Formwork Code of Practice

### Design disciplines, skills and competencies.

Pt Blink technology system and the associated componentry have been designed by qualified engineers, tested to meet standards and associated compliance. Please refer to the Engineering Drawings for your particular project specifications.

The installation of Pt Blink technology system and components must be undertaken by a suitably qualified, trained and informed licensed rigger.

## CONCEPTUAL AND SCHEMATIC DESIGN PHASE

### Potential design issues that may affect safety

Pt Blink has prepared the technology system componentry in accordance with the design brief. Pt Blink has, to the best of its ability, considered the impact of neighbouring properties, examined clearances for the delivery and installation of the components, in particular the floor pans.

It is the responsibility of the Principal Contractor to ensure there are sufficient clearances or effective risk controls in place where there are power lines adjacent to the construction site and that there are traffic management plans in place for the delivery and unloading of the trucks carrying the componentry. The Principal Contractor is also responsible for the supervision of the operation of the crane, including slinging the



floor pans and components from the delivery truck into place and establishing appropriate exclusion zones for the path of travel for each floor pan and componentry.

The Licensee is responsible for the safe working environment around the delivery trucks, for the purpose of:

- Affixing edge protection to those appropriate floor pans
- Slings the panels by the crane into place.

Pt Blink has designed and certified the floor pan self-locating pins on the Columns, lifting eyes on each floor pan so they can receive certified hooks and slings from the crane, as well as provided all the relevant points to mount edge protection, that can accept scaffolding type components or other appropriate materials to form that edge protection, to applicable floor pans before they are lifted into place.

Refer to the site map to be provided by the Principal Contractor and any accompanying drawings of the project site by the building designer for safe access around the site, including neighbouring properties and roadways.

### High consequence hazards

Pt Blink has identified the following high consequence hazards:

- Crush injuries as a result of the floor pan breaking away from the crane slings during transit from the delivery truck to being secured by the Licensee into place onto the self-locating pins.
- Pinch or crush hazards where body parts are inappropriately placed as the floor pan is placed onto the self-locating pins.
- Falls from heights for any persons working or walking near the edge of the building on the floors provided by Pt Blink.
- Refer to the Principal Contractors Safety Plan and the projects designer for high risks associated with powerlines or other like risks associated with each specific construction site.



**Crush Injuries, Pinch Points, Falls from Heights- risks that require effective management**

### Systems of work

While Pt Blink technology system affords a reduction in construction time, it is not the intension of Pt Blink that the construction is rapid or rushed. The time savings have been achieved through the construction methodology, that is pre-fabricated floor pans delivered to site, ready for receiving concrete. These floor pans are being constructed off site simultaneously as ground works and lower levels are constructed.

The materials utilised by Pt Blink include:

Quality steel

Tensioned cable

Bolts and brackets

Lifting eyes.



**Refer to Engineering Drawings and Specifications**

Please refer to the engineering drawings for a list of all the materials and their specifications.

The following is the step methodology for the delivery and installation of the Pt Blink technology system and componentry. This section has significant detail for the attention and advice to the Licensee and the Principal Contractor and forms the essential advice on the method of construction. Images have been added to assist with clarity and this section may be reproduced for the purpose of including it in pre-start toolbox talks with all associated workers, in particular the riggers.

### Preparation of Site

Pt Blink recommends that the Principal Contractor undertakes the following preparation in readiness to receive the componentry:

- Ensure that all suppliers are advised not to make any deliveries to site during the period of installing Pt Blink componentry.
- Have a system in place to divert any deliveries that are made to site.
- Consult with neighbouring occupiers on what they can expect during the assembly of Pt Blink componentry and what safe systems have been put in place, including the benefits to them for this style of construction, as detailed in the Principals above.
- Establish exclusion zones along the pathways of travel for floor pans and components.

### Delivery area

It is recommended that the Licensee obtain a loading platform, similar to Figure 2. The loading platform is used to access the floor pans/componentry to affix edge protection and to sling the load, providing a safe way to retreat from the truck prior to the crane lifting the floor pans and components.



FIGURE 2 - LOADING PLATFORM

The delivery area should be for the sole use of installing the Pt Blink technology system during the installation period. Note: the floor pans will be loaded in a manner that facilitates a planned sequence lift to installation.

The Licensee is to have suitably qualified riggers who have been involved and/or fully briefed on the Safe Work Method Statement prepared specifically for the installation of Pt Blink floor pans and componentry. For the steps below, 'Rigger' will refer to the Licensee's engaged workers.

### Step 1

The Rigger is to install the columns and associated components that receive the floor pans. This is achieved by the crane lifting each column into position from the delivery truck. Riggers to guide into placement and fix column as per specifications. Where identified, apply bracing. Check all columns are in appropriately in place, including ensuring the required tolerances have been achieved to receive the floor pans.

### Step 2



Critical: Install Edge Protection before lifting floor pans into position

A Scaffolder is to install edge protection on those panels that will form the edge of the building, while the panel is situated on the truck or unloaded to ground level prior to lifting into place. The edge protection should be to a minimum specification of 1100mm in height though Pt Blink recommends 1200mm from top of reo-bar to allow for placement of concrete floor, consist of a top rail, mid rail (optional where mesh is used) and 150mm kick board, as well as have 25mm x 25mm square mesh that can withstand 380MPa (Refer to s306E and s315D WHS Reg 2011 (Qld) and s3.9 Formwork Code of Practice 2016).

### Step 3

The Rigger is to hook the crane slings to the floor pan lifting eyes. While connecting, a final visual inspection that the lifting eyes have not been damaged during transit should be undertaken. Using Chain Slings will afford a safer disconnection, so the sling can hang to a reachable position from the working deck to access the crane hooks.

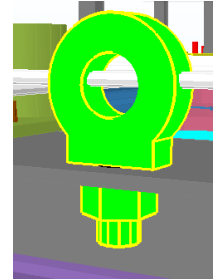


FIGURE 3 - LIFTING EYE

### Step 4

The rigger is to have placed a suitable work platform in a safe position and timing, so as to firstly insert the Self-Locating Pin through the Column. Then move to a safe area as the floor pan is prepared to be slewed into position. This platform ladder is supported and stabilised by being placed on plywood over reo-bar.

### Step 5

The Crane is to lift the floor pans into their sequenced location, with the Riggers assisting/facilitating the dogging of the load into place.

With the Rigger in a safe area as the floor pan is slewed into position, so as to sight the self-locating pins and locking mechanism at each side of the floor pan. Note: for the corner and edge floor pans, the outer edge securing pins are inserted and then not to be accessed until the floor pan is in place on all Self-Locating Pins. When it has been ascertained that the floor pan has engaged all self-locating pins, the riggers can safely access the locking mechanisms. **⚠**This is a hazardous task. Refer to the Licensee's Safe Work Method Statement for task specific detail. Note: Requires Emergency and Rescue Procedures. While it is the Licensee's responsibility to manage this task based risk, Pt Blink recommends the use of a 'Gotcha Kits' and to ensure there is sufficient clear area to fall without impacting an object, under the worker, based on the method of controlling the risk of fall e.g. Fall Arrest Lanyard vs Inertia Reel.



FIGURE 4 - SELF-LOCATING PIN AND FASTENING BOLTS

**⚠ Hazardous Task: Refer to Licensee's SWMS**

### Step 6

Riggers to place work platform into a position on a stable surface (e.g. plywood over reo-bar) to access the bolt points adjacent to the self-locating pins. This should be directly in front of the Columns. For Columns along the edge of the building, the platform ladder to have the guard rail facing the edge of the building. For the edge Columns, Riggers to have an Fall Arrest System Lanyard or Inertia Reel and carabiner to hook onto the spare point for a self-locating pin. As soon as they are standing

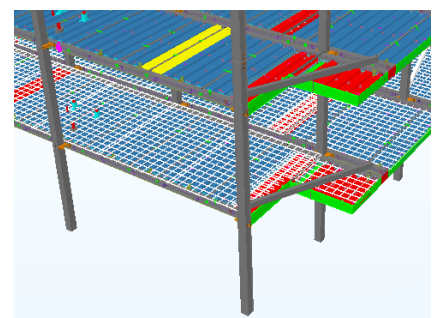


FIGURE 5 - FLOOR PANS

on the work platform, they are to secure themselves via the Fall Arrest System. Riggers to bolt the floor pan into place and inspect. Descend platform ladder. When all bolts secured, unhook from crane. Slings will allow the crane hook point to be reached from standing on the working deck, removing the need to use a platform ladder to access.



**Affixing the bolts is a hazardous task. Refer to Licensee Safe Work Method Statements for task specific detail.**

### Step 7

Repeat for each floor pan until one full floor is locked into place. No further floors are to be added until each lower floor is fully in place, locked and inspected and edge protection has been effected, including any immediate after installation improvements and/or gaps protected. Place Bracing as and where designed in the sequence.



**Critical:** Bracing must be placed in the sequence of fitting floor pans.

### Step 8

Once the full floor has been locked into place, stairs are put into place. The Principal Contractor is responsible to ensure a safe means of access/egress to the completed floor in accordance with the Site Safety Plan.

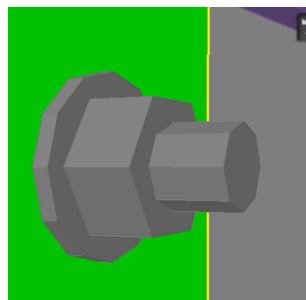


FIGURE 6 - LOCKING BOLTS

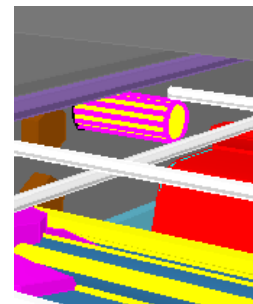


FIGURE 7 - CONNECTING PINS

### Step 9

Principal Contractor to place fireboard along the appropriate gaps between the panels, providing fall protection for objects due to the <200mm floor penetrations this gap produces.

### Step 10

Riggers to place shear reo bar into columns and place lap reo bars over joints. Place drainage bungs.

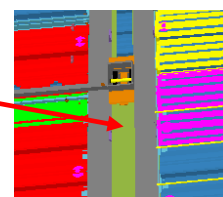


FIGURE 8 - FLOOR PAN GAP

### Step 11

Licensee is to sign off each completed floor and provide a copy of this sign off to the Principal Contractor.

(Principal Contractor to consider having an independent signoff by a competent person, e.g. Engineer prior to pouring concrete and/or prior to each new installed level)

### Step 12

Principal Contractor is to maintain safe access to completed floors and provide amenities where required. This may include placing a walkway, utilising products such as a sheet of Kliplock or similar as a walkway

and/or base for amenities. Where the Principal Contractor is providing a personnel/goods hoist, such as an Alimak, that work can be commenced on the signed off floor.



**Note: Always maintain safe access, egress & edge protection**

### **Step 13**

Principal Contractor to maintain edge protection. Where that involves the erection of scaffold, the supplied handrail edge protection at the time of install can be removed once the scaffold has been erected according to the scaffolding design and installation processes and the Principal Contractor is satisfied edge protection is maintained via the alternate means.

### **Step 14**

Ritek Wall Systems are pre-fabricated permanent formwork panel systems. This system complements the Pt Blink technology system to provide the walls of the building. By tying into the Pt Blink System and subsequently concreting the floor panel and wall system, provides the final supporting structure of the building. Refer to the Ritek Wall System for specific details of construction safety in design requirements.

### **Step 15 – Roof Placement**

Once the top floor has been completed and signed off, and the Principal Contractor is satisfied all works have been completed in preparation for the roof installation, the riggers can commence placement of roof steel and purlins in a progressive manner. Once roof is installed, Licensee to signoff completion, providing a copy of the signoff to the Principal Contractor.

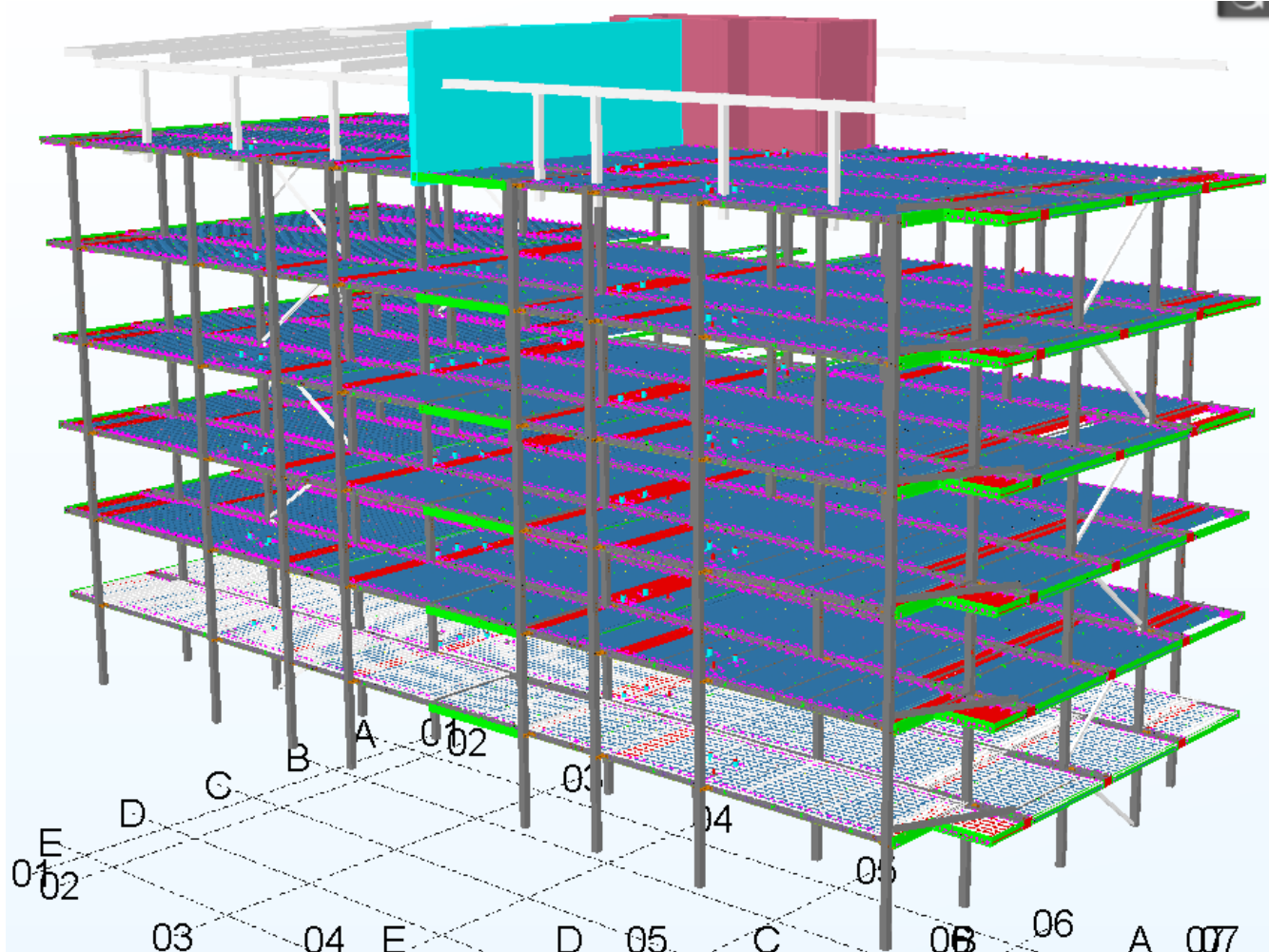


FIGURE 9 TOTAL BUILDING CONCEPT DESIGN

Human factor risks in relation to this process include errors in affixing the securing bolts, attaching and releasing crane slings and appropriately engaging the locking mechanisms. There is an expectation that the Riggers ability and skills will address these human factor risks, in addition to their ability to change behavior to adapt and/or compensate for challenges such as unexpected strong wind gusts as the floor pan lowers onto self-locating pins.

### Environmental conditions

The decision to proceed with installing Pt Blink when weather conditions may pose risks, is the decision of the Principal Contractor, however, it is recommended that consultation with the Riggers is paramount. The installation should be undertaken during normal day light hours. Due to the requirement to position floor pans onto self-locating pins is a critical part of the process, sufficient light is required for both the crane driver and riggers to undertake this task.

High winds and rain will have an impact on safely maneuvering the floor pans. It is the Principal Contractors decision to consider the impact of wind, gusts and rain, and it is recommended this decision is undertaken in consultation with the Crane Operator and Riggers.



## Incident mitigation

Due to the unique construction technique utilised by Pt Blink, it is recommended that the Principal Contractor considers this construction technique when designing the site emergency procedures. While every effort and consideration is taken into account to mitigate risks and eliminate injury, there is a legislative requirement to always be able to extricate an injured or unwell worker from the work area, for example a worker suffering heart failure. In this regard, while all installation works until all floor pans for a level are in place, are undertaken from the lower level, once the floor pans are in place, Riggers and other workers will need to undertake tasks to complete the floor from the newly installed level. It is the Principal Contractors responsibility to provide the riggers safe access and egress, including in the event of an emergency. Refer to the Principal Contractors Site Safety Plan.

## Design development phase

The National Construction Code (BCA) and the following current Australian Standard Codes:

- Structural Design Actions Code AS/NZS 1170
- Timber Structures Code AS1720
- Composite Structures Code AS2327
- Residential Slabs and Footings Code AS2870
- Concrete Structures Code AS3600
- Formwork for Concrete AS3610
- Masonry Structures Code AS3700
- Guidelines for the Erection of Building Steelwork AS3828
- Steel Structures Code AS4100
- Cold Formes Steel Structures AS4600
- Steel Reinforcing Materials AS4671
- Earth-retaining Structures Code AS4678 Scope



## DESIGN FOR SAFE CONSTRUCTION

### Control measures for risks relating to the construction of a structure

In regards to the risks identified in this manual, the following are the recommended control measures to address those risks:

- Installation of the Pt Blink floor pans and components are undertaken by suitably qualified, trained and informed riggers.
- Working at Height risks are controlled by:
  - Access to releasing the lifting hooks is by way of using chain slings, where the crane can lower the hooking point to a position that is reached from standing on the working deck.
  - Access to insert bolts is by way of a platform ladder, suitably placed to be safely used on the reo-meshed pans, for example using a sheet of plywood; in addition, riggers attached to fall restraint system, by utilising the self-locating pin plate to hook onto, and those systems tested

- 
- and exercised prior or immediately after installing the first floor (so as to have a suitable working height) to safely test procedures.
- Work area is excluded from other trades.
  - Edge protection for each floor is put into place while the floor pan is at ground level, either on the truck via a mobile work platform as illustrated above (see figure 2), or by lifting the floor pan to the ground.
  - Crush Injuries due to a floor pan breaking away from crane slings during lifting:
    - Slings are rated to lift the floor pans and columns.
    - Slings are inspected prior to use and tagged as in service.
    - Effective exclusion zone in place along the path of travel of the floor pans.
    - Riggers to always remain at a safe distance from the floor pan as it is lifted into place and not to be under the floor pan until the floor pan is sitting on all self-locating pins.
  - Pinch/Crush injuries as floor pan attaches to self-locating pins:
    - Riggers to not touch the floor pans at or within 300mm of the self-locating pins should any additional guiding onto the pins be required.
    - Consider the use of lanyards/tag lines to guide the floor pan into place, being conscious of any risks of utilising such lanyards/tag lines.
  - Fall from height or stuck by falling object from installed floor pan levels:
    - Suitable edge protection (hand rails, kick board and mesh paneling) installed at ground level for the edge of building floor pans, prior to being lifted into position.
    - Edge protection to be kept in place and in good order until other edge protection, e.g. scaffolding, is installed.
    - Tools that are being used at the edge of the building are to be fitted with a lanyard affixed to the worker and an effective exclusion zone established, and where required a catch system.
  - Pt Blink's technology system reduces a range of typical construction risks, in particular, those associated with erecting and dismantling formwork; floor penetrations are prepared prior to lifting floor pans into place; reduction of dust and noise associated with formworks.
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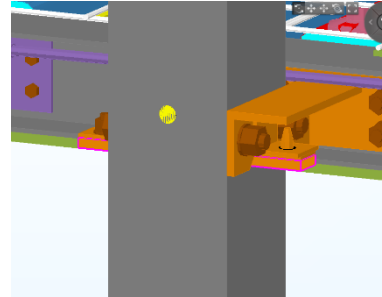


## Typical Connections Details

The floor pans are connected to the columns firstly through plates that facilitate a self-locating function as the crane places the floor pans into place, and through two high tensile bolts fitted through this self-locating plate by Riggers once the floor pan is in place. The self-locating pins provide the required safe loading point to hold the load of the floor pan. The two high tensile bolts provide additional safe loading for taking the weight of the concrete. Designed to facilitate safe use.



FIGURE 10 SELF-LOCATING PIN ASSEMBLY WITH BOLTS



### Risks relating to the function of a structure have been controlled by:

Pt Blink's technology system is a building structure system for use by building designers. In relation to the function of the structure, please refer to the building designers Safety in Design Report for risks relating to the function of the structure.

However, to complement this report, the Pt Blink floors and structure meet fire regulations, with fire suppressive materials installed at the time of assembly and penetrations are addressed during installation.

Please refer to the design drawings for floor loadings. The typical structure is for accommodation and office space, and is not utilised to accommodate heavy machinery or other heavy loads.

## DESIGN FOR SAFE MAINTENANCE

### Risks relating to cleaning, servicing and maintaining a structure have been controlled by:

In relation to risks associated with servicing and maintaining the structure, tensioned cable is encapsulated within steel bearers where there is a significantly reduced chance of any post construction works where drilling occurs, to damage these cables.

The floor pans become redundant after the concrete is cured and there are no maintenance requirements expected.

In relation to works undertaken at height, e.g. roof maintenance or re-painting, refer to the project designer report for roof safety systems.

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## LIFECYCLE HAZARDS IDENTIFIED AND RISKS CONTROLLED

### Electrical safety

- Protection of leads/conduit/cables is in accordance with the building code and relevant state electrical safety act and regulations. Conduit is installed both during fabrication of the floor pans and after installation/prior to placing concrete. There is appropriate isolation between electrical cables and the steel structure.

### Fire and emergencies

- Appropriate fire rating has been achieved through the use of fire suppression materials and sheeting.
- Refer to the building designers Safety in Design report for all fire and emergency risk controls.

### Movement of people and materials

Refer to the engineering specifications and drawing for floor loads. Where an excessive load is identified after the completion of the building, e.g. a large fireproof safe, spa pools; installers must refer to the building engineering specifications and may require a specific engineering review. This information should be included in the building commissioning information to the owner.

### Working environment

Please refer to the building designers Safety In Design Report for all matters pertaining to the working environment provided by the building. Pt Blink is providing structure construction and is not responsible for addressing risks associated with the life cycle of the building in this regard.

### Plant

Please refer to the engineering drawings and specifications for the maximum floor loadings on Pt Blink's component of the structure. Please refer to the building designers Safety in Design Report for other matters relating to plant, including mobile plant access throughout the structure.

### Structural safety

The pre-fabricated structure is assembled off site as floor pans. This permits the pre-fabrication works to be undertaken inside a manufacturing shed, affording reduced exposure to UV radiation to workers. The panels are pre-tensioned to specifications. Please refer to the attached testing report: PTB-ST-03 In Plant Testing.

The floor pans are transported to site on trucks.

Licensed riggers are responsible for the erection of the steelwork. Floor pans receive edge protection in anticipation of their position in the structure, prior to being lifted by crane into place. Once floor pans are lifted into place, Riggers must place diagonal bracing as marked and in sequence.

The self-locating pin assembly has been engineered to safely bear the weight of the floor pans as they are lifted into place. Once in place, Riggers then place two high tensile bolts through the mounting plates. This provides the load bearing capacity to accept the concrete that makes for a concrete slab floor. Please refer to the attached testing report: PTB-ST-03 In Plant Testing.

## Manual tasks

Pt Blink contributes to the reduction in manual task risks associated with the construction of the structure. In relation to the life cycle of the building, Pt Blink can only address the construction phase. In this regard, Pt Blink has designed a system that reduces musculoskeletal disorders for construction workers. Refer to the Principles section above.

## Substances

Pt Blink's technology system reduces the exposure to airborne silicates associated with construction. There are no toxic substances utilised in Pt Blink's methodology.

## Falls prevention

During the construction phase, Pt Blink's methodology reduces the risk of a fall from heights, as edge protection is established at ground level prior to lifting floor pans into place. Once the floor pans are locked into position, all edge protection has been established, reducing that risk usually associated with workers placing edge protection for construction purposes. This innovative approach reduces the risk of falls for those trades responsible for 'riser works', such as plumbing and electrical. For lifecycle falls prevention, please refer to the building designers Safety in Design Report.

## Specific risks

The specific risks associated with Pt Blink's technology system only relate to the assembly stage. These risks and their controls are detailed above. There are no known ongoing life cycle risks.

## Noise exposure

Pt Blink's technology system reduces noise risks typically associated with the construction and dismantling of formwork. There are no known noise exposure risks associated with Pt Blink's technology system, or ongoing noise exposure issues throughout the lifecycle of the structure.

## REVIEW AND MONITOR

### Pt Blink's Commitment to continual improvement

Pt Blink is committed to reviewing the technology system, components and methodology in the spirit of continuous improvement. In this regard, the Licensee and Principal Contractor are encouraged to provide feedback during and after installing the Pt Blink system, both to highlight effective risk management and risks controlled, as well as areas for review for improvement. Refer to the attached Review of Manual at Appendix 2.

### Pt Blink Site Audits

Pt Blink will undertake site audits as it deems, to review implementation of this user manual, undertake an assurance the systems elected to be utilised on site for Blink Pt technology systems are not contrary to this manual and do not put Blink Pt at any risk. Site audits are also conducted to obtain real time information on the areas that are working effectively as well as areas for review or improvement.

## Licensee Obligations

The Licensee to provide feedback on the manual and the system of work undertaken so this manual can be updated after each project where the Pt Blink technology system is utilised. Always refer to the latest version of this manual.

## Principal Contractor Opportunity

The Principal Contractor is invited to provide feedback on the manual and the system of work undertaken so this manual can be updated after each project where the Pt Blink technology system is utilised.

## APPENDIX 1 – SITE SPECIFIC DETAIL

Project Title	(Insert title of project – site name)		
Site Address:		Construction Start date	(Insert Date)
Licensee:		Pt Blink Manual provided to Licensee	Insert Date
Principal Contractor:		Pt Blink Manual provided to Principal Contractor	(Insert Date)
Building Designer:		Pt Blink Manual provided to Designer	(Insert Date)
Building Engineers:		Pt Blink Manual provided to Building Engineers	(Insert Date)
No. of Structure levels of Pt Blink:		Expected completion of Pt Blink Structure	(Insert Date)

## APPENDIX 2 - REVIEW OF MANUAL

Pt Blink Manual Review				
Pt Blink Manual		Review Date:		
Licensee Reviewer(s):		Principal Contractor Reviewer(s):		
Section	Item	Y	N	Comments/Changes
Document readability	The title page includes required company information (e.g., logo, company name, project and document title).	<input type="checkbox"/>	<input type="checkbox"/>	
	The purpose of the document is clear and complete.	<input type="checkbox"/>	<input type="checkbox"/>	
	All known audiences/customers/users are described thoroughly and accurately.	<input type="checkbox"/>	<input type="checkbox"/>	
	The scope of the document is accurate and complete.	<input type="checkbox"/>	<input type="checkbox"/>	
	Manual version numbers and release dates are accurate.	<input type="checkbox"/>	<input type="checkbox"/>	
	The table of contents reflects correct page numbers and section names.	<input type="checkbox"/>	<input type="checkbox"/>	
Procedures/ Installation Information	The Safety in Design Report is comprehensive and addresses all atypical risks experienced during the project?	<input type="checkbox"/>	<input type="checkbox"/>	
	Steps were accurate in the sequence experienced during construction of Pt Blink technology system?	<input type="checkbox"/>	<input type="checkbox"/>	
	Language was understandable and sufficient detail provided, including safety specific detail?	<input type="checkbox"/>	<input type="checkbox"/>	
	All corresponding images accurately display the structure components expected to be addressed?	<input type="checkbox"/>	<input type="checkbox"/>	
	Engineering drawings and details complemented the manual?	<input type="checkbox"/>	<input type="checkbox"/>	