Project Proposal Retirement Villa – Owen Glenn

IBS

Industrial Building Specialists

Building your future

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Executive Summary

Industrial Building Specialists (IBS) are a commercially focussed project management company seeking to expand into the luxury home construction market. The Owen Glenn Villa project is an ideal opportunity for the company to enter into this market, with a high-spec 30 room home situated in Russell, Bay of Islands. IBS will be provided with architecturally designed property plans, and all council consents and requirements will have been acquired and met prior to construction commencement.

The property will feature; the villa, a guesthouse, tennis court, Olympic sized swimming pool, 6 car garaging, a chopper pad and fully landscaped grounds.
The villa itself will feature; four levels with underground parking for two cars, a wine cellar, formal and informal dining and lounge areas, a gym, swimming pool and outdoor entertainment area, staff facilities, three bedrooms, a cinema, library, office plus boardroom and a man-cave. The top level of the villa is the master level with a penthouse like apartment including a rooftop patio.

The initiation phase of the project commenced on the 12th of December 2011, with the execution phase beginning on the 9th of January 2012, projected to be completed by the 12th of November 2012. The property is expected to be handed over to Owen Glenn on the 16th of November 2012, with the project officially coming to a close on the 17th of November 2012.

The project has an initial budget set at:	$12,669,430.70
This figure is made up of the construction costs:	$10,557,858.90
As well as a 10% contingency of:	$ 1,055,785.89
And a construction fee of:	$ 1,055,785.89

The priority project constraint factor has been identified as quality, followed by time and cost respectively. Due to this being the first luxury home construction undertaken by IBS, the key project objective will be to deliver a quality luxury home to the specified standards, within the required timeframe and on budget.

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Introduction

Based upon the authorisation of the Owen Glenn Retirement Villa project, this report shows the development of a project management plan focussing particularly on the planning process, but discussing the full project lifecycle.

We will start by identifying the project scope and preparing a work breakdown structure (WBS), followed by summarising the project schedule and budget. We will then outline the project stakeholders, priorities and objectives, as well as discussing key personnel roles and responsibilities, followed by discussing the reporting schedule and outlining the project communication plan and management approach. To complete the planning process we will prepare a scope statement.

Further more we will discuss the role of a project manager and look at the management of project resources. Finally we will discuss the four phases of a project in respect to the Owen Glenn Village project, and look at the management of company resources with respect to IBS.

1.0 Project Overview

1.1 Project Components

- Client specifications and requirements surrounding the project will be identified, and a contract prepared, which will outline all terms and conditions of the project that have been agreed upon by both parties. Once specifications are established and documented, all staff will be briefed on the importance of quality being the key priority in order to meet the client's expectations and needs. At this stage the floor plans will have been prepared *(see appendix 1.1)*
- The project team will develop a schedule and work break down structure, (WBS) *(see appendix 1.2)* which will highlight key dates, milestones and deadlines for all project tasks.
- A detailed list will be prepared of all construction materials, equipment and resources needing to be utilised throughout the execution phase of the

project. A full budget and costs summary must also be prepared and submitted to the client *(see appendix 1.3 for individual costs and appendix 1.4 for overall costs).* The project manager will meet with all internal and external stakeholders and inform them on the full scope of the project

- A risk management plan *(see appendix 1.5)* will be documented which will outline the protocols and contingency plans associated with each of the key risk factors associated with the project. All legal matters must be dealt with accordingly and prior to the commencement of construction. This includes insurance premiums, licenses, legal fees, consultant fees and all relevant permits and consents.
- On completion of site preparation, the concrete foundations, walls and block laying of the main villa will commence. Portacom and porta-loo facilities will be delivered and installed by this stage in order to accommodate on site workers, along with the installation of industrial rubbish skips *(see appendix 1.6).*
- The project manager must submit regular progress and performance reports on all aspects of the project *(see appendix 1.7).* This will ensure that all developments, milestones and any risk factors are documented throughout the entire process of the project.
- The hard and soft landscaping is a key component within the execution phase and must be completed in the early stages of construction; this is when the swimming pools are installed. The main services are to be laid and terminated at this stage *(see appendix 1.6).* These include the drainage, sewage, water, electrical and gas.
- The construction of the villa and guest house are the key components within the project scope and includes the construction of frames and flooring, the roof installation, elevator installation, balconies/decks, guttering and downpipes, internal building installations, as well as exterior painting.
- All interior tasks must be carried out at this stage including the pre-line installation of all the electrical, plumbing, heating/cooling systems, gas, fire sprinklers and insulation. Once these installations have been completed the next development in the project is the sanding and polishing of the timber

floors, plastering, painting and tiling of the villa, guest house and swimming pool areas.

- Bathroom and kitchen joinery is installed into the villa and guesthouse. All major housing installations will be installed at this stage; plumbing, electrical, drainage, gas and ventilation.
- Once the driveway and soft landscaping has been completed, temporary installations from the construction site will be removed.
- The completion/handover phase concludes the project and entails; a site inspection to be conducted by the project team and a further inspection by the project sponsor. A final closing meeting will then be held between the project manager and client to sign off on all major documents.

1.2 Work Breakdown Structure

WBS chart *(see appendix 1.2)*

Critical Path Method

A Critical Path Method is one of several project planning tools. This method is used when a project is made up of a number of individual activities which will start once another activity reaches its finish date. If the project was to follow the Critical Path Method *(as seen in appendix 1.8)* the execution phase of the project would take 669 days to complete. Due to the assumption being made that Owen Glenn would like his retirement villa to be built by christmas 2012, this would not be feasible considering the project start date is the 9th January 2012. Most of the tasks needing to be completed will overlap due to the nature of the job. An example of this is while the builders are working on the framework for the building on level 3, the landscapers could be working on the design for the grounds and the pre-line installations can be introduced onto the ground and first floor.

1.3 Schedule and Budget Summary

Below are the total costs associated with completing the following project deliverables:

Project Costs	
- Grounds	$3,394,787.50
- Site Preparation	$154,987.50
- Foundations	$1,959,315.00
- Landscaping	$ 773,725.00
- Services	$ 506,760.00
- Construction	$3,155,330.50
- Interior	$2,795,067.00
- Temporary Installations	$258,478.90
- Project Team and Security	$530,720.00
Total budget cost	**$12,669,430.70**
- Total project costs	$10,557,858.90
- Contingency costs (10%)	$1,055,785.89
- IBS Fee (10%)	$1,055,785.89

Schedule Summary

September – December 2011

- Business case completed (Including all legal documents)
- Project authorisation approved
- Project team assembled/Project Manager appointed
- WBS, scope statement and project plans completed

January – March 2012

- Beginning of execution phase (January 9th 2012)
- Site excavation and profiles completed
- Form work and pre-slab started
- Water, gas, electrical, drainage and sewage systems laid and terminated
- Foundation work completed

April – June 2012

- Pre-slab and concrete pouring completed
- Framing construction completed on all three levels of the villa
- Hard landscaping completed
- Electrical, plumbing, heating/cooling and gas systems installed

July – September 2012

- Gib board installation completed
- Exterior painting completed
- Roof framing and installation completed
- Stairs, elevator, flooring and insulation installed
- Exterior cladding installed
- Windows and doors installed
- Exterior balconies and decks constructed
- Gutters and downpipes installed
- Plastering and painting completed
- Installation of swimming pools
- Timber finishing completed
- Interior floor/wall tiling
- Installation of pool surrounding tiling

October – December 2012

- Sand and polish timber flooring
- Electrical, plumbing, drainage and gas systems installed/inspected
- Soft landscaping completed
- Kitchen and bathroom installations completed
- Kitchen and bathroom joinery completed
- Fire safety systems installed
- Final property inspections by sponsor and officials
- Handover/Completion phase of project
  (Final documentation preparation and project report completed)

1.4 Project Stakeholders

Stakeholder Register

Prepared by: IBS Construction Ltd **Date:** January 9 – November 12 2012

Name	Position	Internal/ External	Project Role
Project sponsor (Owen Glenn)	The role of the sponsor is to provide the details and requirements of the project, liaise with the project manager throughout the project but largely the initial and final stages of the job, and ultimately approve all major decisions within the contract.	External	Provides job specifications, and requirements. Is responsible for paying IBS for the project. Oversees the initial stages of the project and approves all official documents and contracts. Is the official point of contact.

Project Team	Project Manager Assistant Project Manager Architect Landscape Architect Consultants - Electrical - Plumbing - Building - OSH Officer Site Manager Key Contract Managers - Building - Electrical - Plumbing	Internal/ external	**Project Manager:** Represents the client and organises scheduling, initiating and supervising of all project activities. Ensures all tasks are completed successfully. Submits regular cost and progress reports to the client (Lock, 2007) **Project Team:** All key staff members associated specifically with the designing, planning, delegating and managing each task within the given project
Stakeholders	Local Council Builders Concreters Excavators Plumbers Block Layers Electricians Drain Layers Landscapers Gas Fitters Heating Ventilation Fire Sprinkler Installers Scaffolders Roofers Aluminium Joiners Gib Stoppers Plasterers Tilers Painters Joiners Labourers Pool Installers Elevator Installers Surveyors Road Construction Insulation Installers All local business (Due to the influx of workers commuting to and from the town over the 10 month period of construction – E.g. Local Hotels etc.) Neighbouring residents OSH Officers	Both external and internal	**Stakeholders:** People involved in or affected by project activities. This also includes the project sponsor, project team, support staff, customers, users, suppliers, and any other opposing parties (Schwalbe, 2010)
Suppliers	Joinery suppliers Electrical suppliers Drainage suppliers Scaffolding suppliers Elevator suppliers Fire sprinkler system suppliers Tile suppliers Swimming Pool suppliers	External	**Suppliers:** The selected organizations responsible for providing a specific service or commodity (Lock, 2007).

	Plumbing suppliers Aluminium joinery suppliers Skip Installers Concrete suppliers Landscaping suppliers Building suppliers - Timber etc. Portacom Installers Porta-loo suppliers		

1.5 Project Priorities

The challenge of every project is to be successful within the Triple Constraints Theory, being quality, cost (resources) and schedule (time). These three elements work in tandem with one another and where one element may be restricted, the other two will be increased or extended. Either way, one or two of these elements will always be a higher priority.

The first priority for this project is the quality; this is due to the lifestyle that Owen Glenn lives. He would want a high quality retirement villa, with quality furniture. It would need to have a well thought out and precise layout, landscaping and design. The retirement Villa will need to accommodate every need that Owen Glenn has, as this is where he will be spending the majority of his time.

Assuming that Owen Glenn would like the retirement villa to be built by Christmas 2012, the second priority for the project is time. Time is also a key priority due to Owen Glenn's age and the fact that he is ready to enjoy his retirement.

The third priority being cost, is not a major priority due to Owen Glenn's existing wealth. However, IBS would need to take into consideration that he would not want to spend a majority of his retirement savings on building his retirement villa; however due to Owen Glenn wanting a high quality retirement villa, costs would be expected to be on the larger scale.

1.6 Project Objectives

IBS are a project management company specialising in industrial construction. The objective of this project is to clearly identify the specifications, requirements and expectations of the client (Owen Glenn) and construct a fully functional, luxury retirement villa. The client is a high profile member of the community and wants to build a home that is going to cater to his personal needs and lifestyle. A key aim for IBS is to ensure the project is completed within the allocated time frame, that all aspects of the project have been inspected and approved to the required standard, and that all amenities and home systems are fully operational.

In order to ensure the key objectives are being met throughout the course of the project, regular progress reports are to be submitted by the project manager to the client. These reports will be official documents that will help to keep the client updated on all major developments and milestones. IBS have identified quality as the key focus. By successfully delivering the desired customer outcome, IBS will begin to be recognised as a real player in the luxury home construction industry.

1.7 Roles and Responsibilities

The IBS Project Team includes the Project Manager, Assistant Project Manager, Architect, Landscape Architect, Electrical, Plumbing, and Building consultants, an OSH Officer and Site Manager, as well as key representatives from the sub-contractors, being the Building, Electrical and Plumbing Contract Managers. Each individual involved in the project team has not only personal responsibilities but also team responsibilities. The responsibilities of each member's role within the project team are stated in the table *(seen in appendix 1.9).*

1.8 Reporting Schedule

The progress reports will include the three main forms that could be used throughout the duration of this project to document all major milestones,

developments and issues (Schwalbe, 2010). These forms include; The Weekly Progress Report; The Lessons Learned Report and; The Final Progress Report *(seen in appendix 1.7).* Appendix 1.7 demonstrates how each report would be presented, filed and recorded.

1.9 Communication Plan

The purpose of the Communications Plan (below) is to define the communications requirements for the project and how the information will be distributed to all who are involved in the project. It will detail the guidelines for communications throughout the life of the project and will be revised throughout the project if changes need to be made. This plan identifies the roles of individuals involved in this project. It also includes a communications matrix *(seen in appendix 1.10)* which shows what the communication requirements are for this project. Furthermore, included in this plan is a guide for conducting meetings, which details both the communications rules and how the meetings will be conducted, ensuring that the meetings that are conducted are successful and are not lost for time. A project team directory would also be included, which would provide contact details of all stakeholders directly involved in the project.

1.9.a Communications Management Approach

The Project Manager of the Owen Glenn Villa project will need to be proactive and ensure that there is effective communication between everyone involved in the project. The Project Manager alone will spend approximately 80% of their time communicating. The communication requirements are shown in the communications matrix *(as seen in appendix 1.10).* The communications matrix can be used as a guide throughout the project, showing what information needs to be communicated, who is to do the communicating, when they need to communicate the information and who they need to communicate the information to. By having a strong communications management approach, many management problems can be avoided so it is important to consider how communications will be managed.

1.9.b Roles

Project Sponsor

The project sponsor will need to be involved in reviewing prototypes, approval of designs and implementation stages and acceptance of the final product that the project delivers. As the project sponsor will be accepting the final project deliverable, they will need to be informed of the project status, including potential impacts to the schedule for the final deliverable or the product itself, and any implications that may occur. As the project sponsor is at the executive level, communications should be presented in summary unless the project sponsor requests more detailed communications.

Project Manager

The Project Manager has the overall responsibility for the execution of the project and therefore is the primary communicator for the project distributing information according to the Communications Management Plan. Communications for the project manager are at a very high level of detail.

Key Stakeholders

When referring to the stakeholders in a project, you are referring to all individuals and organizations that are impacted by the project. For this particular project we are defining a subset of the stakeholders as Key Stakeholders. These are the stakeholders that we need to communicate with and those who are not included in the other roles defined in this section. The Key Stakeholders include the key users identified for participation in the project.

Project Team

The Project Team is comprised of all persons who have a role in performing work on the project. The project team needs to have a clear understanding of the work to be completed and the structure of the project, so therefore must communicate with project manager daily, as well as to their team members. The Project Team plays a key role in developing the Project Plan, including defining its schedule so require communications to be at a very detailed level.

Steering Committee

The Steering Committee includes management representing the departments that make up the organisation. The Steering Committee provides strategic oversight for changes that impact the overall organisation. The purpose of this committee is to ensure that changes within the organisation are effected in such a way that it benefits the organisation as a whole. The Steering Committee requires communication on matters that will change the scope of the project and its deliverables.

1.9.c Project Team Directory

The following table presents contact information for all persons identified in this Communications Management Plan. The email addresses and phone numbers identified in this table will be used to communicate with these people.

Role	Name	Email	Phone
Project Sponsor			
Project Manager			
Project Stakeholders			
Customer			
Project Team			

1.9.d Meeting Guidelines

Meeting Agenda

The meeting agenda will be distributed 5 business days in advance of the meeting. The Agenda should identify the presenter for each topic along with a time limit for that topic. The first item in the agenda should be a review of action items from the previous meeting.

Meeting Minutes

Meeting minutes will be distributed within 2 business days following the meeting. Meeting minutes will include the status of all items from the agenda along with new action items.

Action Items

Action Items are recorded in both the meeting agenda and minutes. Action items will include both the action item along with the owner of the action item. Meetings will start with a review of the status of all action items from previous meetings and end with a review of all new action items resulting from the meeting. The review of the new action items will include identifying the owner for each action item.

Meeting Chair Person

The Chair Person is responsible for distributing the meeting agenda, facilitating the meeting and distributing the meeting minutes. The Chair Person will ensure that the meeting starts and ends on time and that all presenters adhere to their allocated time frames.

Note Taker

The Note Taker is responsible for documenting the status of all meeting items, taking notes of anything of importance during the meeting. The Note Taker will give a copy of their notes to the Chair Person at the end of each meeting, as the Chair Person will use these notes to create the Meeting Minutes.

Time Keeper

The Time Keeper is responsible for helping the facilitator adhere to the time limits set in the meeting agenda. The Time Keeper will let the presenter know when they are approaching the end of their allocated time. Typically a quick hand signal to the presenter indicating how many minutes remain for the topic is sufficient.

2.0 Scope Statement

SCOPE STATEMENT

Project Title: The Owen Glenn Retirement Villa Project
(Industrial Building Specialists Ltd)

Total Project Budget: $12,669,430.70

Start Date: January 9, 2012

End Date: November 12, 2012

Date: December 15, 2011

Project Summary and Justification:

Owen Glenn, founder and executive chairman of Vanguard Logistics Services, has employed the services of IBS (Industrial building specialists) to construct a luxury retirement villa located in Russell, Bay of Islands, New Zealand. Architecturally design plans, and all required resource consents will be supplied by the client prior to project execution. The villa will be custom designed serving to cater to the individual needs and requirements of the client and the lifestyle he leads. Quality is of the upmost importance in this project and IBS will strive to provide the client with a state of the art home and property, within the set time frame allocated for the project. The key tasks, requirements and characteristics involved in completing a project of this nature needs to be written clearly and in order of sequence *(seen in appendix 1.11).*

Summary of Project Deliverables:

- The Owen Glenn Retirement Villa
- Additional guesthouse
- Helicopter pad
- Swimming pool (50 x 10 metre Olympic length)
- Tennis court
- 6-car garaging plus implement shed
- Outdoor patio area

Project Success Criteria

The project sponsor, Owen Glenn, has requested that the project be completed before the Christmas period. Therefore the success of the project largely relies upon the execution process being completed within the allocated ten month period, with a contingency of approximately six weeks (December 24 2012).

The client is a high profile member of the community and is looking to build a luxury retirement villa, thus the importance placed on the overall quality of the project, ensuring that IBS deliver the client a fully functional home.

3.0 Role of The Project Manager

Project management is the ability to direct and coordinate human and material resources throughout the one-time life of a project by using management techniques to achieve predetermined objectives of scope and participation satisfaction.

In general, a project manager's role is the overall responsibility for carrying out successful initiation, planning, design, execution, monitoring, controlling and closure of a project. This role is a difficult challenge and they receive high visibility within a firm, so therefore report directly to top management. According to Heizer and Render (2011), they are responsible for managing the scope, also known as the triple constraint for projects, which are:

1. That all necessary activities are finished in proper sequence and on time.
2. That the project comes in within budget.
3. That the project meets its quality goals.

The Project Manager must not only be able to design a project plan but be able to work the plan also. Heizer and Render (2011) have illustrated this in the management of projects, which involves three phases; planning which includes setting the goals and objectives, and preparing and defining the scope. At this stage, the project manager will also break down the work structure of the project; scheduling which includes the organising and amalgamation of sequences and relates everything together so that the plans run smoothly; and controlling which involves monitoring and reporting the progress, controlling

quality and managing risks and issues. This is the stage where unexpected situations may arise and plans must be changed or shifted. Each step is equally important and must be executed in order (Heizer & Render, 2011).

Exclusive to the Owen Glenn Retirement Villa Project, the project manager who would specialise in construction must be able to meet certain requirements and specifications in order to determine, implement and accomplish the exact needs of the client, based on the knowledge of the firm that they are representing.

Specifically, the Project Manager's *activities* include planning, organising, coordinating and defining scope; scheduling and sequencing; resource planning and monitoring the processes, materials and surroundings; time and cost estimating; estimating the quantifiable characteristics of products, events and information; inspecting equipment and the structures; documentation; risk analysis; business partnering; communicating by telephone, email, in written form or in person to internal sources including supervisors, co-workers, clients as well as external sources such as the government and the public; team leadership; strategic influencing; benefits realisation; and much more (Haughey, 2012)

Their *duties and tasks* required involve being able to:

- Schedule the project in logical steps and budget time required to meet the deadlines
- Determine labour requirements and dispatch workers to the construction site
- Inspect and review projects to monitor compliance with building safety codes and other regulations
- Interpret and explain plans and contract terms to administrative staff, workers and clients

- Prepare contracts and negotiate revisions, changes and additions to contractual agreements with architects, consultants, clients, suppliers and sub-contractors
- Obtain all necessary permits and licenses
- Direct and supervise workers
- Study the job specifications to determine the appropriate construction methods
- Select, contract and oversee workers who complete specific tasks of the project such as painting, tiling or plumbing
- Requisition supplies and materials to complete construction projects
- Prepare and submit budget estimates and progress and cost tracking reports
- Develop and implement quality control programs
- Take actions to deal with the results of delays, bad weather, or emergencies at the construction site
- Communicate at a high level with supervisory personnel, owners, contractors, and design professionals to discuss and resolve matters such as work procedures, complaints, and construction problems
- Plan, organise and direct activities concerned with the construction and maintenance of structures, facilities and systems
- Investigate damage, accidents, or delays at construction sites, to ensure that proper procedures are being carried out.
- Evaluate construction methods and determine the cost, time and quality effectiveness of plan
- Direct acquisition of land for construction projects

(Career Planner, 2012)

To do this effectively, the Project Manager must be able to communicate to his team, to top management, and to the stakeholders involved including the client, the council, the neighbourhood residents and anyone else who may be affected by the project. They must encompass certain foundations and functional *skills, abilities and knowledge*.

Reading comprehension, critical thinking, coordination, mathematics, instructing, writing, judgment and decision making, negotiation and active listening are all *skills* that a Project Manager uses in their role on a day-to-day basis (Career Planner, 2012)

Their *abilities* to complete the project include oral expression in order to communicate ideas and information; oral comprehension and speech clarity in order to listen and understand others ideas, opinions and thoughts; written comprehension so as to read and understand information presented in writing; and also problem sensitivity to tell when something is wrong or likely to go wrong. The Project Manager must have the ability to ask penetrating questions, detect unstated assumptions and resolve conflict. It is also important that they are capable of motivating the people assigned to the project as this will encourage commitment and support, and the people involved will feel more willing to go out of their way to make things work for the project manager. Along with these abilities, they must know how to teach effectively and constantly provide feedback. Organisational skills are vital as well as possessing more general management skills also (Career Planner, 2012)

Overall, it is evident that the role of the Project Manager is exceptionally important and involves a lot of skill, ability and knowledge to carry out successful activities and duties. They hold the overall responsibility for a project and overlook everyone and everything involved. They are the middle-man and representative between the company and the client and hold the heavy responsibility of ensuring that the customer's specifications are met on time, to budget and to the level of quality considered necessary.

4.0 Project Resources Management

4.1 Materials and Personnel Management Plan

Resource allocation is the responsibility of the Project Manager. At the planning phase of the project, the manager needs to determine all the human and material resources that will be required to complete the project. With the aid of Microsoft

Project or other project software, human and material resources required can be determined as jobs are assigned.

When allocating resources to tasks it is important that sufficient time and materials are allocated, as they can be a constraint and cause delays in the completion of the project. It is also important to ensure that the people allocated to the task have the necessary skills to complete the task and will also be available when their tasks are due. Of importance at this stage is to ensure that resources are not double allocated to different tasks or completely missed on the schedule. For the Owen Glenn Villa project, a list of people resources required for the entire project has been listed (*Appendices 1.12 and 1.13*). Most of the management personnel required are part of the project team, with the bulk of the human resources being contracted. The contractors will determine the required skill level of the majority of the labour force.

Availability of labour will be affected by the location as the Bay of Island's population stood at only 50,000 as of 2008. With the view that not many of the 50,000 are part of the workforce it will be difficult to get the right skills for the job. With the area being a tourist destination, there may be difficulties in sourcing some of the required skills for the project. Also to note is the fact that with the population in the area being so small, sourcing labour could be difficult more so for specialised skills, and having replacements for skilled labour like builders and roofers. This may be a daunting task for the contractors. Other factors that will affect availability include absenteeism due to illness, family commitments or holidays. This may have a significant impact on the project, as tasks may not be completed on time.

Materials resources are also determined by a quantity surveyor, in consultation with the Project Manager. Once the list is approved the Project Manager's role will shift to sourcing as well as controlling those materials. Key focus will be to ensure that the budgeted materials are fully utilised and savings that can be achieved are achieved. The Project Manager is responsible for sourcing the materials required as well as ensuring that they are all delivered onsite when

their required time of use is due. This will reduce potential waiting time as well as the risk of non-delivery. But it is equally important for the project manager to ensure that the timing of delivery will not increase inventory costs and also pose a risk of spoilage of the materials onsite.

The Bay of Islands is located in the upper north of the North Island where access in the case of floods or other natural disasters may be limited, potentially affecting the delivery of supplies. Adequate planning is key to Owen Glenn's project as delivery delays or early deliveries may increase the costs of the project. Early deliveries will result in the need for security as failure to have one may result in the theft of supplies. Insurance will also be an added cost to the project. Likewise delivery lead times should also be determined with suppliers as short lead times will be most beneficial to the project. Getting material quantities correct the first time when ordering will be crucial as ordering incorrect quantities will affect the project schedule. Other factors affecting availability of materials are availability of supplies, delay in paying for materials, transport availability, shortage on the market, as well as breakdowns during transportation.

Depending on the supplier, some may not be able to supply large quantities of materials in one order. This will result in having to source other suppliers to cover the shortfall, which may pose the risk of conflicting delivery schedules, potentially delaying the project. So it is important that the Project Manager engages suppliers who have the capacity to meet their needs. The Owen Glenn Villa project vast, both in cost and size and a lot of material resources will be required. With the project schedule being fairly tight there is little room for schedule overruns. With New Zealand being a small country it is possible that demand may outstrip supply, as there are a lot of construction projects going on in many parts of the country. Knowing lead-times will go a long way to ensuring that delivery's are on time. As the Project Manager is directly responsible for paying suppliers, delays in paying for materials may result in delays in the delivery of materials, as some disgruntled suppliers may not be willing to release goods before payment. Because of the size of the project scheduling

transportation may also be a constraint as suppliers may not be able to make deliveries at expected times. Transport breakdown will affect delivery as it may require offloading of the materials to another vehicle.

4.3 Risk Factors Management Plan

Risk is defined as a "probability or threat of a damage, injury, liability, loss, or other negative occurrence that is caused by external or internal vulnerabilities, and that may be neutralized through pre-emptive action" (Business Directory, N.D)

In order for projects to be successful Project Mangers often carry out a risk assessment of what could go wrong against the project plan, and plan accordingly. A list of actions will be identified that will mitigate the risks to ensure that the project stays on track for completion. For a Risk Assessment Register that was carried out for this particular project see (*appendix 1.5*). Risk management in the construction industry has become relevant, as it has helped to mitigate derailment of project plan completions.

Client variation is always a risk that may derail a project timeline. During the planning stage of a project there has to be a regular engagement with the client to ensure that the project manager fully understands the client's needs, as changes to the project scope once a project is underway resulting in scope crawl may result in cost overruns, as well as compromise to quality. Variations occur as the result of two main factors; the client changing their mind, or misinterpretation of the client's needs. To mitigate such a risk the Project Manager must establish a project team that will work with the client through the planning phase in order to understand the client, thus defining the scope and functions of the project. Costs associated with the client changing their mind will mean that the client must to bare the costs. However, for a company like IBS, that has Project Managers managing multiple projects, this could affect the amount of work undertaken, as the managers will still have to complete their assignment before taking on a new one.

Tight schedule is another risk that may be encountered by Project Mangers. Project Managers need to develop an appropriate schedule during the feasibility phase. While doing so, sufficient time should be allocated to all stages of the process, but care should be exercised as too much redundant time will erode the savings in the project due to the fact that time and cost are closely related. The longer the project takes the more costly it will be whilst the opposite will result in cost savings.

Lack of co-ordination amongst project participants may result in disruption to construction activities. Project Mangers should always be the main contact and co-ordinator of project activities. The project manager must ensure that the various clients they are co-ordinating are kept in the loop with regard to all programs, activities and decisions. Any deviation from the plan should be communicated through the manager or the designated contact. This ensures that everyone involved has his or her needs or grievances addressed and attended to.

5.0 Four Project Phases

In order to successfully and efficiently execute a project, completing all deliverables within budget, on time and to a satisfactory quality level the project must be thoroughly researched, planned and managed.

To effectively achieve this outcome, a successful project is broken into four process groups, otherwise known as the 'Project Life Cycle', these being; initiation phase, planning phase, execution phase and the completion/handover phase.

Throughout the entirety of the project life cycle all processes will be monitored and controlled to ensure that the project team is meeting the specific project objectives, with any corrective action being made as necessary. (Schwalbe, 2010)

In general terms, the execution phase of a project will demand the most resources and time *(see appendix 1.13),* followed by the planning phase and finally the initiation and completion/handover phases. It can also be noted that in many cases the more time and resources that are committed to a project in the planning phase, the less time and resources required in the execution phase. This shows a direct connection between good planning and efficient execution.

5.1 Initiation Phase

With IBS specialising in industrial building, the initiation phase of the Owen Glenn Villa project had some very important 'company level' decisions to be made. IBS have never taken on a private residence project before so lack in experience in this area. IBS must also consider whether or not they want to expand into residential construction, and whether this move will impact in any way on their already successful industrial building business. It is decided that an expansion into the luxury home construction market will be a beneficial move for the company, and a home project of this scope will make for an excellent opportunity to enter into the high-end residential construction market.

In an effort to assess the feasibility of the project, upper management would meet with the project's sponsor, 'Owen Glenn' to look over the architectural plans for the villa and to discuss the project scope, taking into consideration any time and cost constraints. From here a business case is developed from which a project approval will be based upon.

After gaining authorisation for the project to go ahead, a project manager is appointed with the initial tasks of identifying all possible stakeholders and developing a project charter. The key outputs produced by these two tasks are a stakeholder register, a stakeholder management strategy and a project charter. The project charter will act as the formal authorisation of the project, outlining key details including starting and completion dates, budget, objectives and milestones, as well as listing key personnel roles and responsibilities.

Finally a legal binding contract between IBS and Owen Glenn is drawn up and signed, detailing the responsibilities and limitations of both parties.

5.2 Planning Phase

Planning is an essential process in managing a project. The main purpose of the planning phase is to produce project plans with which to guide the project execution.

Firstly however a project team would be assembled. This team would include key personnel from within the IBS company structure as well as essential managers from the sub-contracted companies. This team, lead by the project manager will meet regularly during the planning process to discuss, develop, review and plan all aspects of the Owen Glenn villa project. The team will meet according to the communication plan during the execution phase, and the project manager will stay in close contact with all project team members throughout the entirety of the project.

The first tasks performed by the project team are to define the project scope outlining all components of the project. From here a scope statement and WBS *(see appendix 1.2)* is developed. To ensure that the WBS is clear and understood by all, a WBS dictionary is also produced *(see appendix 1.14).*

After completing the WBS, the project team is able to complete a project schedule including budget, milestones and the management of both company and external personnel and resources.

Other key project planning documents developed by the project team include; a stakeholder's register, a list of project priorities by hierarchy, an outline of the project objectives, a register of roles and responsibilities, a reporting schedule, a communications plan and a risk factors management plan.

Throughout the course of the project, documentation may be updated due to any changes, adjustments or allowances caused by potential requests from the project sponsor, personnel changes, learning's, or any other unforeseen circumstances.

5.3 Execution Phase

The key outcome of the execution process of a project is to complete all deliverables as per the project plan; on time, within budget and to a quality level excepted by the project sponsor.

With sufficient time and energy committed to the planning process, the project execution should run smoothly with little need for diversion from the project plan. This is not always the case with the possibility of scope creep through additional requests from the project sponsor or any other unforeseen circumstances as mentioned above, potentially creating the need for a revision of the project plan. However, even the unknown can be allowed for within the project plan with a rigorous assessment of the potential risks, and strict management of those risk factors.

As with any project, the project manager plays a very important role in the Owen Glenn Villa project's execution phase. As well as overseeing the actual construction of the Villa and the development of the property, the project manager is responsible for the overall co-ordination of all personnel and resources used throughout the execution process.

The execution process sees the contracting of all external companies involved in the project and the signing of contracts between IBS and each contracted company, as well as arranging the procurement of all material resources required to complete the construction process.

The Project team will continue to meet to discuss and resolve any issues that may arise. A constant communication will be maintained at all levels of the

project, facilitating the distribution of information and documentation regarding potential scope amendments, progress reports, document updates and general project information. The project sponsor will be updated regularly on the project's progress and consulted with as required, as will other project stakeholders.

Individual project milestones will be acknowledged with an informal celebratory gathering of all project personnel who contributed to that particular milestone, compliments of the project team.

The project manager will closely monitor, direct and manage the project execution, and with the assistance of the project team monitor and control the project's quality, time, cost and risk factors as well as managing all personnel and material resources, project communication, project procurement and stakeholders. The project team will achieve this by measuring the projects progress towards it's objectives, while monitoring any deviation from the project plan and taking corrective action to match progress with the project plan.

If the project is managed correctly and efficiently, all deliverables will be completed successfully within time, cost and quality constraints. (Schwalbe, 2010).

5.4 Completion/Handover Phase

The key outcomes of the completion/handover process of a project are to gain a formal acceptance of the completed project by stakeholders and the project sponsor, as well as bringing the project to a close.

With the Owen Glenn Villa project, this process is completed with a final property inspection being conducted by the project sponsor in order to verify that all deliverables have been completed to the expected standard.

Once the project has been formally accepted, all contracts and procurement agreements are officially closed, project documents are updated, a lessons-learned report is produced and a final project report is written. In order to provide short-term after sale support for all aspects of the new build, IBS's property maintenance team is officially signed on as managers of the Owen Glenn Property.

In recognition of a successful project and a job well done, an official closing party is hosted by IBS as a final thank you to all personnel who were involved in it's success.

For IBS, the Owen Glenn Villa project's success has particular significance, being that it is the first private residence project conducted by the company. Due to inexperience in this market, with reflection, potentially there are crucial lessons to be learnt and considerations to be made. If IBS were to seek further contracts to build luxury homes, these lessons will only improve their project outcomes and grow their experience. The lessons-learned report in this instance is especially important.

IBS specialise in industrial construction but are seeking to expand their company. Management must seriously evaluate the complexities of managing projects of the luxury home nature and assess whether or not it fits into the scope of the company structure as it currently stands. Although the project may be deemed a success on completion, IBS must question whether or not the project was profitable, and were they able to efficiently balance their industrially focussed resources? Would an expansion into the private residence market have a negative or positive impact on their already established brand? Would IBS be better to establish an independent brand specialising in private residence construction, or will a private residence wing of the business benefit from the already established IBS brand, resulting in a specialised group being developed under the IBS brand.

The key question to be answered by IBS is, "Do we wish to continue pursuing the construction of luxury homes?"

6.0 Management of Company Resources

6.1 Personnel Management Plan

Managing company resources can be difficult especially when there are several projects happening at once. A shortage of staff or company resources for individual projects could result in budget and/or time overruns, or a lack of quality standards. Therefore it is vital that an overall personnel management plan is introduced to IBS in order to ensure that there is sufficient management of the company's resources.

A personnel management plan would include a timeline, detailing when company meetings would take place, whether daily, weekly or monthly. The plan would also include an ever-changing timeline showing all existing and future projects. This would allow the management team to be able to view schedules, make assumptions on the current workload and base decisions around these. The planner would be in charge of this and would act as a project co-ordinator.

Planning meetings in advance will ensure that instead of informally organising staff meetings, which may not always suit each individual, meetings would be a set event that all staff would be required to attend. Meetings are an important way of communicating and are extremely beneficial to everyone as they; involve face-to-face communication, are a great way of delivering new knowledge and information as well as discussing crucial issues and team projects. Regular meetings keep staff updated on work matters, and are an effective method of keeping track of individual and team work progress.

Personnel management plans for the distribution of staff resources would be discussed in two separate weekly meetings.

1. A meeting with all of the project managers, the company's in-house project planner and the operations manager would take place to discuss work progress and the allocation of staff between all projects. Teleconferencing would be utilised in this meeting between Christchurch and Auckland staff.
2. A weekly meeting for each individual project would include the project manager and assistant, the site manager, OSH manager, building manager and the team leaders of the various trades on site that week. Any other relevant members would be included in this meeting to discuss more particular details i.e. Engineer, architect.

It is critical that communication is very strong within all sectors of the company, at all levels. Regular communications should continue away from meetings, with an open door policy adopted. All staff would be encouraged to voice any concerns that they may have and to make suggestions of ways in which projects can be managed and executed better.

The project team's hour's work on the Owen Glenn Retirement Villa Project:

Project Team	Total Hours Worked	% of Total Project Worked
Site Manager	1712 hrs	100%
Project Manager	856 hrs	50%
Assistant Project Manager	856 hrs	50%
Building Consultant	342.4 hrs	20%
Electrical Contractor	342.4 hrs	20%
Plumbing Contractor	342.4 hrs	20%
Building Contractor	342.4 hrs	20%
Architect	342.4 hrs	20%
Landscaping Architect	84.8hrs of the landscaping time component	20% of the landscaping time component

Each project manager would be assigned two projects at a time, which means they would allow approximately 50% of their total working time on each project, depending on the size and complexity of the project. To work out how they should divide their time, the project managers would need to consider the

different aspects of the projects such as priorities, key dates and milestones, the start and finish dates and the meeting dates with the clients, suppliers, stakeholders, the various trades teams and others.

As well as the allocated time on each project, the architects, engineers and consultants may be required for advice and any suggestions as and when issues arise. The administration staffs' time will be utilised across all projects and their time allocation to one particular project will be dependent on senior management's requirements and prioritisation.

6.2 Resources Management Plan

Material and labour resources are not limited with IBS as they are a project management company rather than a construction company *(see appendix 1.15).* Due to the structure of the company, IBS source contractors to carry out the majority of the execution process. Contracted companies provide all equipment and machinery required to complete their individual contract requirements while all materials and supplies are procured by IBS. The site manager and project manager oversee contractors to ensure that their equipment and labour force are capable of completing their required tasks. The timeline *(seen in appendix 1.6)* is a detailed plan of when each individual contractor is required to start and finish their onsite tasks. Timelines will be used for every project and will be strictly adhered to. Should a variation to the timeline occur, all senior personnel involved in the project would be notified at the weekly, meeting where a decision will be made on a new course of action. This may involve extending working hours to make up for lost time.

Conclusion

It is our intention to fulfil this contract as per the outline, offering the client the best solution and outcome possible in order to meet all of the requirements specified by the client, Owen Glenn.

IBS have provided all necessary documentation and planning throughout the proposal which would allow the Owen Glenn project to be successfully executed. All associated project costs and additional fees have been provided within this proposal document, and IBS will ensure all aspects of the project are completed to the expectations, and required quality standards to meet the client's specifications. All aspects of the project have been strategically planned by the project tewm, as to complete all tasks within the set time frame requested by the client.

IBS will strive to complete the proposed project to the highest standard by ensuring all facilities and additional features within the project are of the highest quality. The main focus for IBS through-out this project has been to meet all of the specifications and requirements of the client and to construct a luxury retirement home that the client and his family will be happy to enjoy for years to come.

Under the direction of Industrial Building Specialists (IBS), the project manager is more than confident that this contract will run according to plan. It will meet the client's specifications, timeframes and will be completed within the budget specified.

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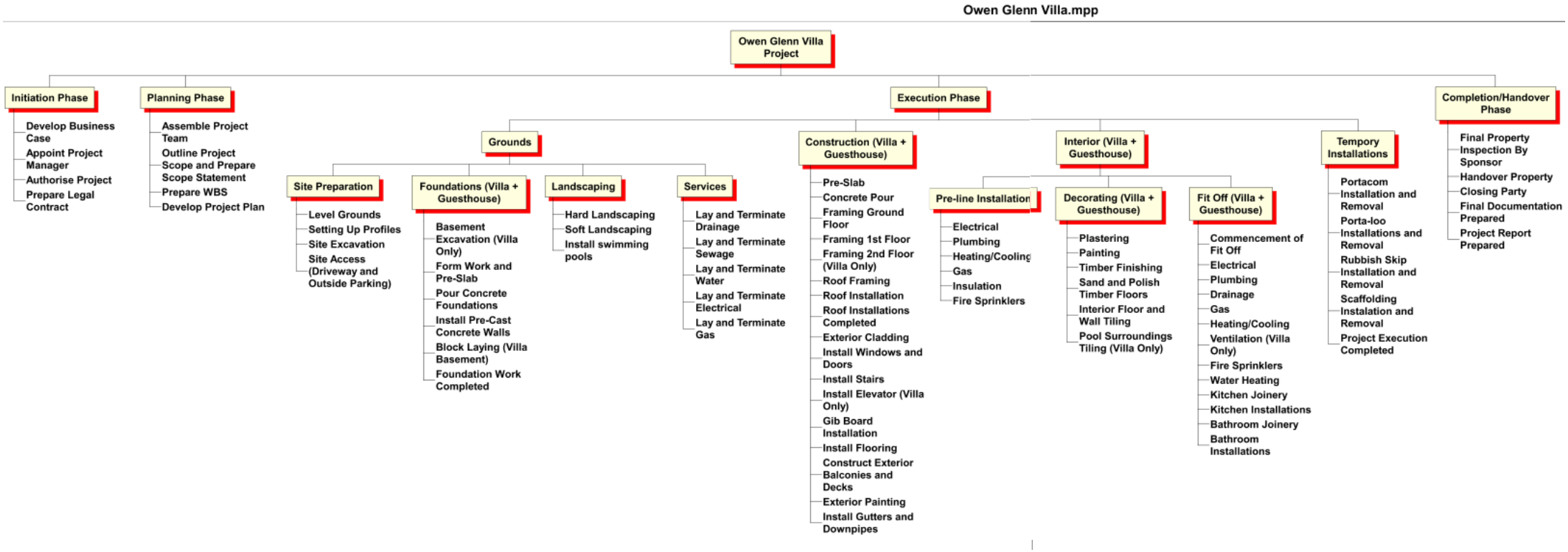
Appendices

Appendix 1.1

Project Floor Plans

(Unavailable in online document)

Appendix 1.2
WBS Chart



Appendix 1.3

Material Resource Cost Register

Material Resource Cost Register			
Item	**Quantity**	**Cost m2**	**Total Cost**
Grounds			
Site Preparation			
Setting up profiles	2476.5	$15.00	$37,147.50
Site Access (Driveway and Outside Parking)	240	$150.00	$36,000.00
Foundations			
Foundation Reinforced Concrete	2476.5	$410.00	$1,015,365.00
Reinforcing	2476.5	$325.00	$804,862.50
Footing	2476.5	$15.00	$37,147.50
Landscaping			
Hard Landscaping	275	$392.00	$107,800.00
Soft Landscaping	275	$75.00	$20,625.00
Swimming pool	50	$4,000.00	$200,000.00
Services			
Lay and Terminate Drainage including hardware			$134,000.00
Lay and Terminate Sewage including hardware			$98,000.00
Lay and Terminate Water including hardware			$64,000.00
Lay terminate Electrical including hardware			$120,000.00
Lay and terminate Gas including hardware			$49,000.00
Construction (Villa + Guesthouse)			
Framing			
25OUB31 steel floor frame	2183	$3.50	$7,640.50
Timber 100 x 50	11000	$10.50	$115,500.00
Timber 200 x 50	12000	$15.00	$180,000.00
Joists and Beams	17000	$12.50	$212,500.00
Flooring			
Joists & Beams 2" x 8" (50x200)	30000	$15.00	$450,000.00
Building Paper	6000	$17.00	$102,000.00
Particle Floor Board 16mm	9000	$9.00	$81,000.00
Native Tongue and Groove	8000	$20.00	$160,000.00
Roofing			
Colorsteel roofing fixed to purlins complete with mesh paper and 100mm insulation	2000	$57.00	$114,000.00
Copper gutters	263	$50.00	$13,150.00
100mm Copper downpipes	105	$50.00	$5,250.00

Alucobond fascia 600mm high on cavity batten on paper on insulation on sub-framing	161	$450.00	$72,450.00
Allowance for rain water outlets and grating from gutter to drain pipes	12	$250.00	$3,000.00
Allowance for roof penetrations and flashings			$3,000.00
External Walls External Finishing			
Maccrocarpa log wall cladding	2000	$140.00	$280,000.00
Decorative façade treatments			$220,000.00
Precast wall panels 150 thick with a painted finish to the exterior, including installation	218	$210.00	$45,780.00
Elevator			
Glass Elevator and all associated hardware			$250,000.00
Windows and Doors			
Double Aluminium Glazed Doors	9	$3,000.00	$27,000.00
Aluminium framed glazed full height windows	49	$1,500.00	$73,500.00
Aluminium framed glazed windows in precast panels	10	$450.00	$4,500.00
Aluminium framed glazed windows in titan board clad timber framed walls	12	$450.00	$5,400.00
Solid core single door swing 2700 high pre-hung in frame including all hardware	29	$2,200.00	$63,800.00
Solid core double door swing 1800 x 2700 high pre-hung in frame including all hardware. (Hardware includes door knobs, screws etc.)	9	$3,400.00	$30,600.00
Floor Finishes			
Porcelain Tiling 600 x 300 porcelain tile for Toilets and showers	230	$140.00	$32,200.00
Extra over last for waterproofing to bathroom floors	23	$50.00	$1,150.00
Flame basalt stone floor tiles for hallways	92	$190.00	$17,480.00
Wall Finishes			
13mm Gib board on and including 50mm x 50mm timber battens to block work or precast walls	5000	$60.00	$300,000.00
13mm Gib board including 50mm x 50mm timber battens	500	$180.00	$90,000.00
Wall Tiling			
Glazed ceramic tiles to all bathrooms	340	$125.00	$42,500.00
EV for waterproofing membrane behind tiles in shower	72	$50.00	$3,600.00
Glazed ceramic tile splash back to kitchens	12	$125.00	$1,500.00
Pool Tiling			

Travertine tiles	1600	$57.00	$91,200.00
Glazed swimming pool tiles	2500	$57.00	$142,500.00
Interior (Villa + Guesthouse)			
Pre-line			
Services			
Electrical including hardware and all wiring	15000	$4.50	$67,500.00
Plumbing including hardware			$87,000.00
Heating and Cooling including hardware			$92,000.00
Gas including hardware			$32,000.00
Heating and Cooling			
Ducted Heat Pumps to the whole house	180	$1,510.50	$271,890.00
Mechanical extract ventilation to basement	1	$38,080.00	$38,080.00
Ducted heated air and constant fresh to toilets	306	$100.00	$30,600.00
Insulation			
Roof R4.0 Ceiling	1200	$18.00	$21,600.00
Wall R2.6	4000	$15.00	$60,000.00
Floors R2.6 Snug Floor	3500	$11.20	$39,200.00
Fire Protection Services			
Sprinkler Piping Installation to all areas	2561	$35.00	$89,635.00
Sprinkler Installation and Commissioning	2561	$12.00	$30,732.00
Fit off			
Electrical			
Lighting and electrical fittings to all areas	2382	$60.00	$142,920.00
Switchboard and hardware			
Communications			
Data Cabling	180	$130.00	$23,400.00
Security			
Cameras and hardware			$75,000.00
MATV			
MATV satellite and receiver			$50,000.00
Gas			
Internal Connections and Fittings			$1,000.00
Water Heating			
Gas water boiler plus all hardware			$100,000.00
Kitchen Joinery			
Units to all kitchens	5		$50,000.00
Bathroom Joinery			

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Units to all bathrooms	10		$20,000.00
Kitchen Installations			
Wall ovens, gas cook tops and range hoods	5		$60,000.00
Drainage			
Sanitary drainage pipework connections			$20,000.00
Swimming Pool			
Pump and water treatment hardware			$215,000.00
Plumbing			
Toilet	10	$500.00	$5,000.00
Basin	10	$600.00	$6,000.00
Shower	6	$1,500.00	$9,000.00
Sink	10	$600.00	$6,000.00
Bath	2	$3,000.00	$6,000.00
Reticulation			$50,000.00
Temporary Installations			
Portacom 12m x 3m, office and lunch room	1		$15,168.50
Porta-loo serviced weekly	6		$13,910.40
Rubbish skip 12m3 emptied weekly	2		$29,400.00
Scaffolding total four levels 300m	180		$200,000.00
Total for Owen Glenn Villa Project			**$7,924,183.90**

Appendix 1.4

Project Baseline Cost Chart

(Unavailable in online document)

Appendix 1.5
Risk Assessment Register

Risk Name	Risk Number	Probability (1-3)	Impact (1-3)	Mitigation	Contingency	Action By	Action When
Heritage Site	1	1	3	Communicate with local authorities and follow through with the process.	Engage local authorities during excavation process in order to expedite the process if any artefacts are found.	Project Manager	Within 30mins of finding artefacts.
Tight Project Schedule	2	2	2	Agree with contractors beforehand that they may have to work overtime or extended hours should the need arise.	Include arrangement in contract, as well as a plan in place to evaluate the schedule to determine when extra work may be required.	Project Manager	During contract agreement phase.
Design Variations	3	1	3	Architect must fully understand client requirements and engage the client at every stage of the process.	The client should be part of the governing board for the project, and communication should be encouraged between the team and client.	Architect and Assistant Project Manager	Ongoing throughout the duration of the project.
Excessive Approval Procedures in Administrative Government Dept.	4	2	2	Ensure a checklist of documents required is in place and followed through as early as possible to avoid delays in the approval process.	Maintain a close communication relationship with the local authorities and have everything in black and white to ensure traceability as well as accountability.	Project Manager and Assistant Project Manager	Ongoing throughout the duration of the project.
Inadequate Program Scheduling	5	1	3	Have a plan to allow for a change in plan. At the same time ensure it does not affect the cost of project.	Have a tracker for task completion and adjust the Gantt Chart as required. Also consider having extra resources to complete the tasks at hand. At the planning stage sufficient time should be allocated to construction activities.	Project Manager	Ongoing throughout the duration of the project.

Unsuitable construction Program Planning	6	1	2	Employ staff with the necessary skills and experience in scheduling tasks.	Engage use of scheduling software like Microsoft Project.	Project Manager	At the planning phase of the project.
Low Management Competency of Sub-contractors	8	2	2	Engage Contractors with a proven record of work and qualifications for tasks at hand.	As part of the tender process select only qualified and experienced contractors.	Project Team	At the planning phase of the project.
Variations by the Client	10	1	2	Understand the client's needs at every stage of the design phase.	Have the client as part of the governing board and communicate with the clients as the stages progresses.	Project Manager	At the planning phase of the project.
Incomplete Approval and other Documents	11	1	3	Delegate a person to oversee the documentations required for all stages of construction.	Assign a person to follow up on all documents required for the project and have weekly updates of the status of the documents.	Project Manager and Project Team	At the planning phase of the project.
Incomplete or inaccurate cost estimate	12	1	3	Engage a Quantity Surveyor with a proven track record of competence.	Allow for cost contingency for every stage of construction.	Quantity Surveyor, Project Manager and Client	At the planning phase of the project.
Lack of co-ordination between project participants	13	1	2	Have a reporting structure in place to allow for all involved to be aware of the status of construction.	Project Manager to liaise with contractors at various stages of construction and feedback to stakeholders, as well co-ordinate interaction.	Project Manager and Assistant Project Manager	Ongoing throughout the duration of the project.
Unavailability of sufficient professionals and managers	14	1	3	Recruit required skills from overseas if not available locally.	While still recruiting make use of consultants for some tasks and establish relationships on an on-going basis for future projects.	Project Manager	Ongoing.
Unavailability of sufficient amount of skilled labour	15	2	2	Establish a training plan for unskilled labour this could be through an institution.	Hire apprentices at different levels of training to work alongside qualified staff.	All engineers with the approval of Project Manager.	At the planning phase of the project.

General Safety accident occurrence	16	1	3	Appoint a Health and Safety Officer for the entire project.	Have Standard Operating procedures in place for all processes and all staff to be trained and signed off before starting work.	Health & Safety Officer	Ongoing throughout the duration of the project.
Inadequate or insufficient site information	17	1	2	Environment tests to be carried out before construction.	Have a Geo-Tech engineer engaged for further tests should they be required.	Project Manager	When the need arises.
Occurrence of disputes	18	1	3	Establish communication channels when disputes occur.	Have an agreed process as well as communication channels e.g. email to be followed by a forum to address such issues.	Project Manager	When the need arises.
Price inflation of construction materials	19	1	3	Agree on a fixed price for all materials.	Have a clause in the contract to return all unused materials and pay for only what's used.	Project Manager and Purchasing officer.	At the planning phase of the project.
Serious noise pollution	20	1	2	Test the noise levels during construction.	Adjust working hours if they are excessive.	Project Manager and Contractors	When the need arises.
Error in procurement of material resources	21	1	3	Proof the orders before sending them out to suppliers.	Check against material resources list.	Assistant Project Manager	Before purchasing orders are sent out.
Force of nature	22	1	3	Understand the environment of the area construction is being undertaken.	Implement necessary emergency response. Ensure relevant authorities are notified.	Project Manager and Health and Safety Officer	When the need arises.
Stakeholder intervention	23	2	3	Ensure that relevant stakeholders are engaged as and when the need arises and an appropriate channel of communication is in place.	Follow the established channel of communication and ensure that an amicable solution is achieved that will ensure continuity of the project.	Project Manager, stakeholders	Immediately.

Loss of Bond to Local Authorities for damage to their roads	24	3	2	Have insurance in place for any damage to local authorities facilities being utilised during construction.	Engage insurance company to deal with the damage and local authorities.	Project Manager	When the need arises.
Unsuitable weather	25	3	3	Plan to have all works that will be halted by weather done before bad weather starts.	Work longer hours to have weatherproofing tasks completed before rainy season.	Project Team	At the planning phase of the project.
Missing a step in the process	26	2	3	Sign off when a step is completed.	Investigate reason for missing a step and whether work can continue, and go back at some point.	Project Team and Contractor	Immediately.

Rating scale probability: 1) Unlikely to occur - 2) May occur - 3) Likely to occur

Impact: 1) Will not interrupt construction - 2) Will cause some project delay - 3) Will cause significant delay to project

Appendix 1.6 *Gantt Chart*

(Unavailable in online document)

Appendix 1.7

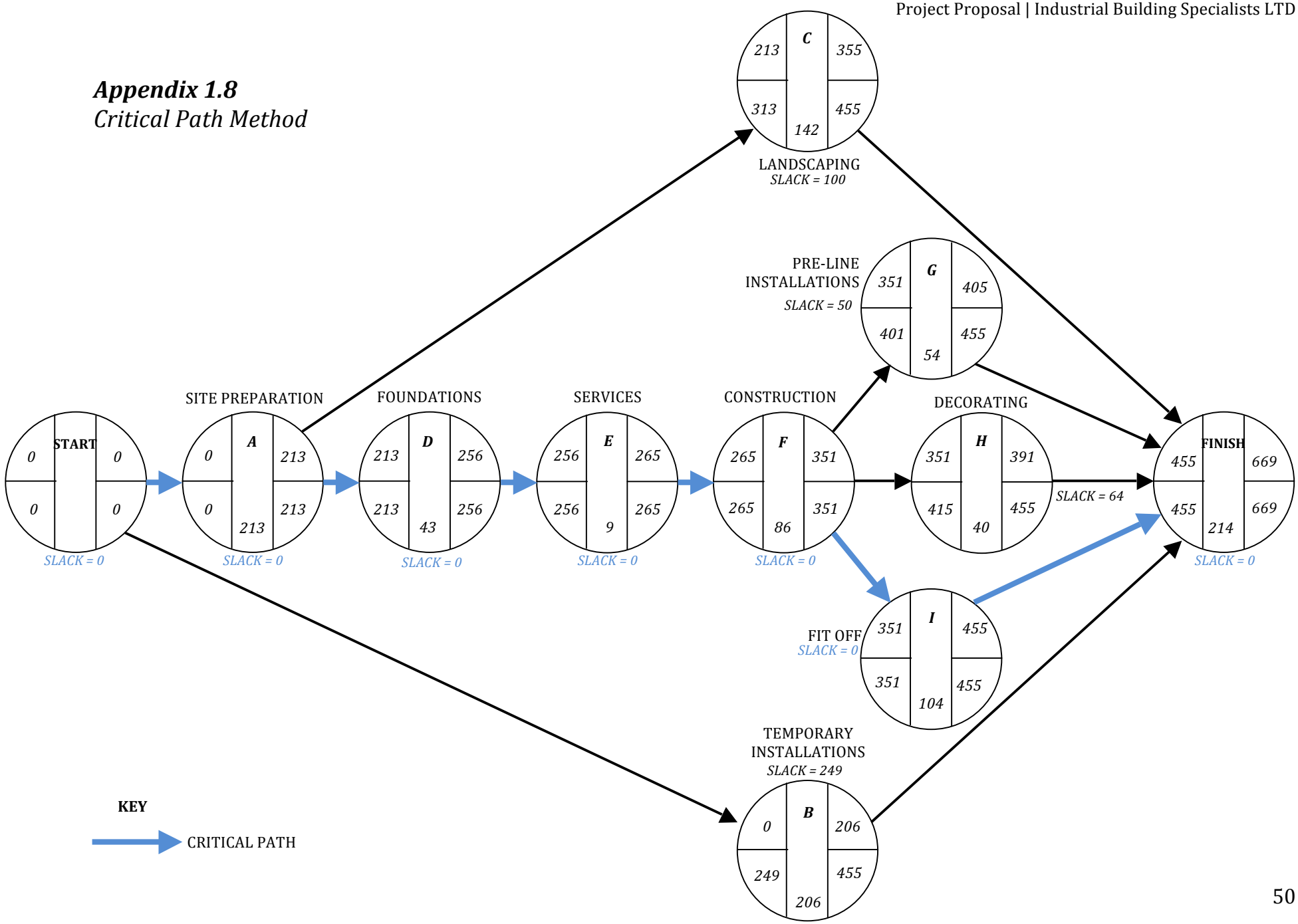
Weekly Progress Report, Lessons Learned Report, Final Progress Report

WEEKLY PROGRESS REPORT		
Project Name: The Owen Glenn Retirement Villa Project	**Team Member:** Amanda Evans (Amanda-Evans@IBS.co.nz)	**Date:** January 9 2012
Tasks completed this week: - - - - -	**Tasks to complete next week:** - - - - -	**Suggestions/Alterations:**
What is going well and why: - - - - - -	**What is not going well and why:** - - - - - - -	**Issues noted:** - - - - - -
Signature		

Lessons Learned Report		
Project Name: The Owen Glenn Retirement Villa Project	**Project Sponsor:** Mr Owen Glenn **Project Manager:** Brittany Gillespie (Brittany-Gillespie@IBS.co.nz)	**Project Dates:** January 9 – November 12 2012
Did the project meet the scope, quality, time and cost goals? :	**What was the success criteria listed in the project scope statement? :**	**Reflections:**
In terms of managing the project, what were the main lessons your team learned from this project? :	**Describe one example of what went right on this project:**	**Describe one example of what went wrong on this project:**
What would you do differently on the next project, based on your experience through-out this project? :		
Signature		

Final Progress Report	
Original Start Date:	**Actual Start Date:**
Original End Date:	**Actual End Date:**
Original Budget:	**Actual Budget:**
Project Objectives: To successfully construct a fully functional, luxury retirement villa within the allocated timeframe and to the expected standard quality of the client specifications	**Summary of Project Results:**
A. Report attachments: - Business case - Project charter - Scope statement - WBS and WBS dictionary - Baseline and actual Gantt chart - List of prioritized risks - Progress reports - Lessons-learned reports - Final presentation - Client acceptance form	**B. Project-related Documentation:** - OSH Evaluation forms - Inspection surveys/Results - Building consent forms
Project Assessment:	**Key Issues Noted:**
Signature	

Appendix 1.8
Critical Path Method



Appendix 1.9

Roles and Responsibilities of the Project Team

Role	Responsibilities
Project Manager	The project manager is the person responsible for managing the overall project in accordance to the project plan. The responsibilities are endless as discussed in more depth in section 3.0 The Role of the Project Manager.
Assistant Project Manager	• All activities are allocated by and is managed by the Project Manager • Updating existing documentation • Excellent planning • Excellent communication • Computer skills • Respect for the rights and of clients • Need for liaison and open communication • Confidentiality • Standards of personal conduct • Responsibility in only undertaking tasks within limits of competence
Architect	• Works closely with executives • Sets quantifiable objectives • Makes critical decisions • Excellent communication • Negotiator • Patient
Landscape Architect	• Excellent communication with staff and customer/s • Direct the landscaping team and manage all site landscaping
Consultants - Building - Plumbing - Electrical	• Consult with customer/s • Prepare documents for contractors • Conduct on-site observations • Administer construction contracts • Prepare information for contractors
OSH Officer	• Assist in Health and Safety procedures • Manage risks and hazards • Report and investigate incidents/injuries/hazards • Review and analyse injury and incident reports • Develop injury and incident prevention strategies • Promote Health and Safety
Site Manager	• Ensure work is done safely • Preparation of site • Monitor progress on site

	• Oversee delivery of all materials and resources • Communication with staff and customer • Monitor deadlines • Carry out safety checks • Liaise with all workers and /or contractors • Monitor all work so it complies with building and health and safety regulations
Contract Managers - Builder - Electrical - Plumber	• Monitor progress of contractors • Resolve any disputes quickly and effectively • Maintain records of work • Document all important events • Develop and implement procedures for contract management • Ensure contract close-off/extension or renewal • Monitor transactions • Work with finance department

Appendix 1.10
Communications Matrix

The following table identifies the communications requirements for this project.

Communication Type	Objective of Communication	Medium	Frequency	Audience	Owner	Deliverable
Initial Meeting	Introduce the project team and the project. Review project objectives and management approach	• Face to face	• Once	• Project Sponsor • Project Team • Stakeholders	• Project Manager	• Agenda • Meeting Minutes
Project Team Meetings	Review status of the project with the team.	• Face to Face • Conference Call	• Weekly	• Project Team	• Project Manager	• Agenda • Meeting Minutes
Monthly Project Status Meetings	Report on the status of the project to management.	• Face to Face • Conference Call	• Monthly	• Management • CEO/Directors	• Project Manager	• Agenda • Meeting Minutes
Project Status Reports	Report the status of the project including activities, progress, costs and issues.	• Email	• Monthly	• Project Sponsor • Project Team • Stakeholders • Support Staff • Management • CEO/Directors	• Project Manager	• Project Status Report

Appendix 1.11
Owen Glenn Project Requirements

Requirements	Characteristics
• Site Preparation	- Level grounds - Setting Up profiles - Site Excavation - Site Access
• Foundations (Villa + Guesthouse)	- Basement excavation - Lay concrete foundations - Construct concrete walls - Lay blocks (Villa + guesthouse)
• Landscaping	- Hard and soft landscaping - Swimming pool installation
• Services	- Lay and terminate the gas, electrical, water, sewage and drainage systems
• Construction (Villa + Guesthouse)	- Lay the pre slab - Construct the framing of the bottom, second and third floors - Install roof framing - Exterior cladding - Install all window and door frames within both the villa and guest house - Install stairs and elevator - Install gib boarding - Construct exterior balconies and decks - Exterior painting - Install gutters and down pipes
• Interior (Villa + Guesthouse)	Pre-Line installation - Electrical - Plumbing - Heating/Cooling ventilation systems - Gas - Insulation Decorating (Villa + Guesthouse) - Plastering - Painting - Timber Finishing - Interior floor tiling

	- Pool surroundings tiling (villa only) Fit Off - Electrical, Plumbing, Drainage, Gas, Heating/Cooling, Water heating, Kitchen joinery and installations, Bathroom Joinery and Installations
• Temporary Installations	- Portacom installations - Porta-loo installations - Rubbish skip installation and removal

Appendix 1.12

Project Resource Usage Chart

(Unavailable in online document)

Appendix 1.13

Project Task Usage Chart

(Unavailable in online document)

Appendix 1.14
WBS Dictionary

1.1 Initiation Phase:

1.1.1 Develop Business Case:
Prepare a business case supporting approving or declining project.

1.1.2 Appoint Project Manager:
Appoint the project manager who will be responsible for the project.

1.1.3 Authorise Project:
Authorise project based on recommendation from the business case.

1.1.4 Prepare Legal Contract:
Prepare a contract representing Owen Glenn as the sponsor and IBS.

1.2 Planning Phase:

1.2.1 Assemble Project Team:
Assemble the personnel, both internal and external who will be working with the project manager on the project.

1.2.2 Outline Project Scope and Prepare Scope Statement:
Project scope is outlined and the scope statement prepared by the project team.

1.2.3 Prepare Work Breakdown Structure:
Work breakdown structure is prepared from the scope statement, by the project team.

1.2.4 Develop Project Plan:
The project plan is developed by the project team.

1.3 Execution Phase:

1.3.1 Grounds:

1.3.1.1 Site Preparation:

1.3.1.1.1 Level Grounds:
Levelling of the entire property, ready for excavation and construction.

1.3.1.1.2 Setting up profiles:
Marking out of building sites as per architect's plans. Including the Villa, Guesthouse, garage, pools, tennis court, chopper pad, site access, driveway and all connecting paths.

1.3.1.1.3 Site Excavation:
Excavation of the site as per the above profiles.

1.3.1.1.4 Site Access (Driveway and Outside Parking):
January, excavation and forming of the driveway and outside parking
October, chipping, sealing and hot-sealing of the driveway and parking.

1.3.1.2 Foundations:

1.3.1.2.1 Basement excavation (Villa Only):
Excavation of basement, underground parking and Villa foundations.

1.3.1.2.2 Form Work and Pre-slab:
Preparation for concrete pouring using temporary or permanent moulds, and installation of re-enforcing steel, pre-pour for the Villa, Guesthouse and garage.

1.3.1.2.3 Pour Concrete Foundations:
Pouring of concrete foundations for the Villa, Guesthouse and garage.

1.3.1.2.4 Install Pre-cast Concrete Walls (Villa Only):
Pre-cast concrete walls installed.

1.3.1.2.5 Block Laying (Villa Basement):
Forming of concrete foundations in basement

1.3.1.2.6 Foundation Work Completed
Milestone

1.3.1.3 Landscaping:

1.3.1.3.1 Hard Landscaping:
Formation of Olympic pool, fountain and tennis court.

1.3.1.3.2 Soft Landscaping:
Formation of petanque area, bird aviary and bbq area, and installation of permitter fencing. Planting of trees, bushes, shrubs etc. Laying of grass.

1.3.1.3.3 Install Swimming Pools
Installation of both swimming pools.

1.3.1.4 Services:

1.3.1.4.1 Lay and Terminate Drainage:
Laying of stormwater pipes and connection to council stormwater.

1.3.1.4.2 Lay and Terminate Sewage:
Laying of sewage pipes and connection to council sewer.

1.3.1.4.3 Lay and Terminate Water:
Laying of water pipes and connection to mains water supplier.

1.3.1.4.4 Lay and Terminate Electrical:
Laying of electrical cables and connection to mains power supplier.

1.3.1.4.5 Lay and Terminate Gas:
Laying of gas line and connection to mains gas supply.

1.3.2 Construction (Villa + Guesthouse):

1.3.2.1 Pre-slab:
Preparation for concrete pouring using temporary or permanent moulds, and installation of re-enforcing steel, pre-pour for ground floor of the Villa, Guest House, garage and chopper pad.

1.3.2.2 Concrete Pour (Villa Only):
Pouring of concrete walls at ground level.

1.3.2.3 Framing Ground Floor:

Construction of ground floor timber/steel framing for the Villa, Guesthouse, Olympic pool and the car garage.

1.3.2.4 Framing First Floor:
Construction of first floor timber/steel framing for the Villa and Guesthouse.

1.3.2.5 Framing Second Floor (Villa Only):
Construction of second floor timber/steel framing

1.3.2.6 Roof Framing:
Construction of timber roof framing to the Villa and Guest House plus the Olympic Pool and the car garage.

1.3.2.7 Roof Installation:
Installation of colour steel roof to the Villa, Guest House and car garage. Glass roof installation to Olympic pool.

1.3.2.8 Roof Installations Completed
Milestone

1.3.2.9 Exterior Cladding:
Installation of exterior log cladding to the Villa, Guest House and car garage.

1.3.2.10 Install Windows and Doors:
Installation of aluminium windows and doors.

1.3.2.11 Install Stairs:
Installation of stairs to the Villa and Guest House.

1.3.2.12 Install Elevator (Villa Only):
Installation of elevator in the Villa.

1.3.2.13 Gib Board Installation:
Installation of sound gib to all rooms and aqua gib to wet areas including bathrooms, sauna, steam room, pool area. A waterproofing membrane will be applied to sauna, steam room and pool area.

1.3.2.14 Install Flooring:
Installation of timber floors on level one and level two, as well as in the guest house.

1.3.2.15 Construct Exterior Balconies and Decks:
Construction of balconies and decks on the Villa and Guesthouse.

1.3.2.16 Exterior Painting:
Painting and staining of the exterior of the Villa and Guesthouse.

1.3.2.17 Install Gutters and Downpipes:
Installation of copper guttering and downpipes to the Villa and Guesthouse.

1.3.3 Interior (Villa + Guesthouse)

1.3.3.1 Pre-line installation

1.3.3.1.1 Electrical:
Installation of all electrical and smart wiring as well as underfloor heating into the Villa and guesthouse

1.3.3.1.2 Plumbing:
Installation of all water and waste piping into the villa and guesthouse

1.3.3.1.3 Heating/Cooling:
Installation of all piping and ducting into the villa and guesthouse.

1.3.3.1.4 Gas:
Installation of all gas piping for water heating and kitchen cooking in the villa and guesthouse.

1.3.3.1.5 Insulation:
Installation of underfloor, wall and roof insulation in the Villa and Guesthouse, and wall and roof installation into the car garage.

1.3.3.1.6 Fire Sprinklers:
Installation of piping and wiring for sprinkler system

1.3.3.2 Decorating (Villa + Guesthouse):

1.3.3.2.1 Plastering:
Plastering of all internal walls in the Villa and Guesthouse.

1.3.3.2.2 Painting:
Painting of all internal walls and polyurethane onto timber finishing in the villa and guesthouse.

1.3.3.2.3 Timber Finishing:
Installation timber architrave into villa and guesthouse.

1.3.3.2.4 Sand and Polish Timber Floors:
Sand and polish tongue and groove floors

1.3.3.2.5 Interior Floor and Wall Tiling:
Tiling of kitchen and bathroom floors and walls in the villa and the guesthouse.

1.3.3.2.6 Pool Surroundings Tiling (Villa Only):
Tiling of the surrounds to the pool area.

1.3.3.3 Fit Off (Villa + Guesthouse):

1.3.3.3.1 Commence Fit Off
Milestone

1.3.3.3.2 Electrical:
Installation and termination of all electrical and smart fittings in the Villa and Guesthouse.

1.3.3.3.3 Plumbing:
Termination of all water and waste fittings in the Villa and Guesthouse.

1.3.3.3.4 Drainage:
Connecting of all stormwater outlets from the Villa and Guesthouse.

1.3.3.3.5 Gas:
Termination of all gas fittings in the Villa and Guesthouse.

1.3.3.3.6 Heating/Cooling
Installation of all internal heating and cooling outlets in the Villa and Guesthouse, as well as the installation of external units.

1.3.3.3.7 Ventilation (Villa Only):
Installation of basement's internal and external ventilation units.

1.3.3.3.8 Fire Sprinklers:
Installation of sprinkler units and hardware.

1.3.3.3.9 Water Heating:
Installation of gas water boiler.

1.3.3.3.10 Kitchen Joinery:
Installation of kitchen cabinets in the Villa and Guesthouse.

1.3.3.3.11 Kitchen Installations:
Installation of fixed kitchen appliances in the Villa and Guesthouse.

1.3.3.3.12 Bathroom Joinery:
Installation of bathroom cabinets in the Villa and Guesthouse.

1.3.3.3.13 Bathroom Installations:
Installation of bathroom fittings in the Villa and Guesthouse.

1.3.4 Temporary Installations

1.3.4.1 Porta-Com Installation and Removal:
Delivery on the 19th of January 2012 of an onsite porta-com to act as a lunchroom and the site manager's office. To be removed on the 12th of November 2012.

1.3.4.2 Porta-Loo installations and Removal:
Delivery on the 19th of January 2012 of onsite porta-loos. To be serviced weekly and removed on the 12th of November 2012.

1.3.4.3 Rubbish Skip Installation and Removal:
Delivery on the 19th of January 2012 of onsite rubbish skips. To be exchanged twice weekly and removed on the 12th of November 2012.

1.3.4.4 Scaffolding:
Installation of exterior temporary scaffolding; which will occur prior to the commencement of the first and second levels of the Villa and Guest house.

1.3.4.5 Project Execution Completed:
Milestone

1.4 Completion/Handover:

1.4.1 Final Property Inspection By Sponsor:

Owen Glenn conducts a final property inspection before taking over the property.

1.4.2 Handover Property:

Owen Glenn officially takes ownership of the final deliverable/product.

1.4.3 Closing Party:

A project completion party is hosted by IBS. Everyone who has worked on the project is invited to celebrate the completion of the project.

1.4.4 Final Documentation Prepared:

Contracts are officially terminated and a lesson's learned report is prepared.

1.4.5 Project Report Prepared:

The final project report is prepared by the project manager.

Appendix 1.15
IBS Company Structure