



Green Wall Panels

Specification Guide

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Application:

Modular Living Wall of Plants System

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RECOMMENDED SPECIFICATION FOR G-SKY GREEN WALL PANELS ATTACHED TO CONCRETE WALL SURFACES

THIS SPECIFICATION IS INTENDED ONLY TO PROVIDE A GENERAL UNDERSTANDING OF THE G-SKY GREEN WALL PANELS ASSEMBLY. IT IS RECOMMENDED THAT A G-SKY REPRESENTATIVE CONDUCT A TECHNICAL ANALYSIS BEFORE SYSTEM COMPOSITION, PLANT SELECTION AND PLANT LAYOUT ARE DETERMINED TO IDENTIFY ANY ADJUSTMENTS OR ADDITIONS TO SPECIFICATION REQUIREMENTS.

FOR A COMPLETE DESCRIPTION OF PRODUCTS AND APPLICABLE STANDARDS, PLEASE REFER TO THE PRODUCT DATA SHEETS (G-SKY – GREEN ROOF & WALL SPECIFICATIONS, CD-ROM OR ON-LINE AT WWW.G-SKY.COM).

PART I GENERAL

1.01 SUMMARY

- A. This specification serves as a guideline and should be adapted to suit the needs of each individual project by the architect. It is prepared in accordance with the NMS three-part section format. Improvements and other changes to the contents may be made only with the written approval of the architect.

1.02 SCOPE

- A. Furnish all labour, materials, tools and equipment to furnish and install Green Wall Panels System provided by G-SKY including G-SKY Green Wall Panels and G-SKY Green Wall Frame, as shown on the Drawings or as directed by the Engineer. This work shall also include G-SKY Irrigation Systems on the drawings.

1.03 RELATED WORK (Edit to project requirements)

NOTE: Specific Provisions: Top of the wall must allow 2¾" from the top of the wall, recessed encasement, or other installation medium to allow for the top securing clasp to be installed and easily accessed for future maintenance.

Refer to the G-SKY Green Wall Panels Typical Specification Drawing or consult the G-SKY building techniques department to draw up a plan illustrating where the abovementioned item is located (for project specific detailed drawings, consulting fees will apply).

A permanent drip irrigation system (G-SKY Irrigation) is required for all G-SKY Green Wall Panels System installations.

- A. Section 02050 – Demolition
- B. Section 02660 – Water Distribution
- C. Section 02810 – Irrigation System
- D. Section 02900 – Landscaping
- E. Section 03300 – Concrete
- F. Section 04100 – Masonry
- G. Section 06100 – Carpentry
- H. Section 07600 – Sheet Metal
- I. Section 07900 – Caulking & Sealants

1.04 REFERENCES

- A. ACI 301 Standard Specification for Structural Concrete
- B. ACI 318 Building Code Requirements for Reinforced Concrete
- C. ACI 332 Guide to Residential Cast-in-Place Concrete Construction
- D. ACI 347 Guide for Formwork for Concrete
- E. ASTM E84 Surface Burning Characteristics of Building Materials
- F. ASTM D4595 Properties of Geotextiles by the Wide-Width Strip Method
- G. ASTM D698 Moisture Density Relationship for Soils, Standard Method

1.05 SYSTEM DESCRIPTION

- A. Vegetated wall cladding system consisting of stainless 304 steel frame mounted using ½" thread bolts and ½" washer to 3¾" wedge anchors to masonry or concrete with a ½" neoprene washer between the concrete and frame, ½" drip line irrigation system of 0.24GPH pressure compensating emitters every 5 13/16", pre-planted and pre-grown G-SKY Green Wall Panels that are 11 7/8" square.

1.06 TECHNICAL DOCUMENTS

- A. Provide two [2] copies of the G-SKY Green Wall Panels System maintenance guidelines as set out by G-SKY(Appendix A).

1.07 VERIFICATION OF STRUCTURAL CAPACITY

- A. Obtain prior, written confirmation from an owner-mandated professional engineer certifying that the structure is capable of bearing the additional load of G-SKY Green Wall Panels System. The owner understands that G-SKY is absolved of any and all liability in the event of collapse.

1.08 QUALITY ASSURANCE

- A. There should be no deviation made from this specification or the detail drawings without prior written approval fourteen (14) days prior to the start of the project.
- B. The Building Envelope Contractor must be an approved member of the regional Building Envelope Contractors Association and must qualify for the Building Envelope Contractors Association Envelope Guarantee or Warranty program.
- C. Before installation of the G-SKY Green Wall Panels System, the wall shall be inspected by a technical representative of the wall system installer/manufacturer to determine the adequacy of the wall surface to accept the G-SKY Green Wall Panels System.
- D. Verification of the integrity of the wall for water tightness shall be the responsibility of the Owner.
- E. The G-SKY Green Wall Panels System components will be purchased from G-SKY.
- F. Pre-Construction Conferences. A representative G-SKY will meet with the necessary parties at the jobsite to review and discuss project conditions.

1.09 G-SKY REPRESENTATIVE

- A. During installation, the contractor must permit and facilitate reasonable access to the work site and roof at all times for a Technical Representative from G-SKY.

- B. Upon completion of the installation, an inspection shall be conducted by a Technical Representative from G-SKY to ascertain that the G-SKY Green Wall Panels System has been installed according to these specifications and details. This inspection is not intended to be a final inspection for the benefit of the owner but for the benefit of determining whether a warranty shall be issued.

1.10 EQUIVALENCY REQUESTS

- A. No equivalencies shall be accepted to replace part or all of the G-SKY Green Wall Panels System.

1.11 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original, unopened containers of original packaging, clearly labeled with manufacturer's name, brand name, instruction for use, all identifying numbers, and related standards.
- B. Before installation, materials must be stored in a dry and ventilated shelter that protects against freezing, inclement weather and any and all harmful substances. It is recommended that in winter months, the material be stored inside, at a temperature of +10°C (50°F).
- C. G-SKY Green Wall Panels plants must be stored in an area that will provide a healthy environment before installation. Depending on weather conditions, this may be outside or inside a temporary Greenhouse shelter.
- D. Determine the area where the installation will begin. Leave the area clear and unobstructed when placing materials for installation. Ensure that the wall is easily accessible with no barriers obstructing access to the wall.
- E. If installation of the G-SKY Green Wall Panels System planted panels is not performed within two (2) days of delivery to the site, the panels must be stored in their original containers and watered every two (2) days through the entire balance of the storage period. A G-SKY representative must also be consulted about any additional instructions.

1.12 PROJECT CONDITIONS

- A. Comply with G-SKY requirements regarding weather, substrate and other project conditions as specified in the Product Data Sheets.
- B. Regularly clear the work site of any debris or other material that can hinder installation or system performance.
- C. When moving materials or installing the Green Wall Panels System, protect exposed work surfaces to avoid damage. The contracted installer is fully responsible for any damage.

1.13 WARRANTY (Edit to project requirements)

- A. Pre-planted G-SKY Green Wall Panels include a one (1) year vegetation warranty starting the date of work acceptance. If the owner agrees to maintain the G-SKY Green Wall Panels as specified by the Appendix A Maintenance section and provides photographic and documented proof of compliance, this warranty will be extended for two (2) additional years, totaling a three (3) year plant warranty. G-SKY must be consulted before the specification of plants for a G-SKY Green Wall Panels System in order to assess the climatic conditions and viability of the plants at the installation site in order to determine if the plant warranty shall be issued. If the plants are approved, an “Approved Plant Material” warranty subject to maintenance compliance shall be issued.
- B. Upon completion of the work, the contractor must supply the owner with a warranty direct from their regional Building Envelope Contractors association, if available, warranting the watertightness of the wall and, material integrity of the other system components.
- C. Warranties available from G-SKY:
 - a. **Plant Material** Warranties, excludes labour.
Duration: 1 Years
 - b. **Total System** Warranties, includes labour. Covers material integrity of the G-SKY Green Wall Panels System components.
Duration: 1 Years
- D. Each warranty varies in scope and terms. **Contact G-SKY for exact warranty terms and conditions to meet the specific project requirements.**

1.14 G-SKY GREEN WALL PANELS SYSTEM MAINTENANCE

- A. G-SKY Green Wall Panels System must be maintained as per the instruction in Appendix A in order to comply with our 1-year plant warranty.

PART II PRODUCTS

2.01 FRAME ANCHOR ASSEMBLY AND NEOPRENE WASHER

A. Description: torque controlled ½" x ¾" stainless steel concrete/masonry bolt wedge anchor consisting of pre-assembled hexagon screw (stainless steel 304), washer (stainless steel 304), expansion sleeve (stainless steel 304), expansion core (stainless steel 304) and neoprene washer. For use with most concrete qualities C20/25 - C50/60. Can support minimum loads of 12.7kN (2,866lbf) in fair quality concrete, higher quality concrete will yield higher maximum loads. Controlled expansion for heavy loads.

1. Specified products: GW:WA12334 (Wedge Anchor Assembly) by G-SKY
GW:NPW12 (Neoprene Washer) by G-SKY

2.02 FRAME

A. Description: frame consisting of vertical support rails spaced either 300 or 600 apart (depending on height of the wall and ability to fit the wall dimensions) and horizontal panel rails 600 or 900mm lengths to hold panels. Four pre-drilled holes for mounting frames located 150mm from the edge of each vertical support in each corner. Made from stainless steel 304.

1. Specified product: GW:FR43 (4h x 3w 12 panel frame) by G-SKY
GW:FR42 (4h x 2w 8 panel frame) by G-SKY
GW:FR43L (4h x 3w 12 panel left corner frame)
by G-SKY
GW:FR43R (4h x 3w 12 panel right corner frame)
by G-SKY

2.03 PLANTED PANEL

A. Description: 300mm x 300mm panel housing with securing hooks on the back to hook onto a supporting frame and a guide groove on top for drip irrigation line. Made from polypropylene. Contains a proprietary growth medium encased in a non-woven, non-corrosive, non-flammable fabric. 13 plants are planted in each panel. In a custom panel, up to 25 plants can be planted in each panel.

1. Specified products: GWP:STANEUON13JAPMICRO by G-SKY
GWP:STANEUON13JAPMICROALBO by G-SKY
GWP:STANEUON13JAPMICROAUREO by G-SKY
GWP:PREMOPHIPOGON13JAPONICUSNANUS
by G-SKY
GWP:PREMPOLYPODIUM13GLYCYRRHIZA
by G-SKY
GWP:PREMTELLIMA13GRANDIFLORA by G-SKY
GWP:CUSTOMPANEL by G-SKY

2.04 IRRIGATION

A. Description: a 6" line-spaced 0.24GPH pressure compensating polyethylene drip irrigation system linked by PVC fittings controlled by an electromagnetic control

valve, with a filter, pressure compensator, controller, rain sensor, batteries, wires, fertilizer injection hose and all other necessary accessories.

1. Specified products: IRA:GW100 by G-SKY
IRA:GW250 by G-SKY
IRA:GW500 by G-SKY
IRA:GW1000 by G-SKY
IRA:GW2000 by G-SKY
IRA:GWCUSTOM by G-SKY

2.05 SECURING CLASP

- A. Description: 600 or 900mm length stainless steel 304 clasp secured to the top of the frame to prevent lifting of panels from system.
 1. Specified products: GW:CLASP by G-SKY

PART III EXECUTION

NOTE: Take all necessary action to maintain the envelope waterproofing warranty. The building envelope contractor must always be informed of the G-SKY Green Wall Panel system to be installed on the wall.

3.01 INSTALLATION SEASON

- A. Unless otherwise permitted, green wall installation shall be done between April 1 and October 15, or when the outside ambient temperature is not below 10°C.

3.02 INSPECTION AND PREPARATION

- A. Before beginning the installation, the owner's representative and the contracted installer's representatives must inspect and approve the wall conditions, including the waterproofing membrane, drainage routes, construction joints, etc.
- B. The area to be greened shall be a smooth and even surface.
- C. The area shall be thoroughly cleaned of debris that might interfere with the installation of frame.
- D. Examine finish surfaces, grades and wall quality. Do not start wedge anchor installation work until unsatisfactory conditions are corrected.
- E. In the event of non-compliance, a notice is to be provided to the contractor listing the corrective action to be taken. Starting the work will be taken to signify approval of the work conditions.
- F. Ensure that all waterproofing, plumbing, woodworking and other work has been duly completed.

NOTE: Retain the following item for warranty.

3.03 SUPERVISION OF WORK BY CONTRACTOR

- A. The building envelope contractor must supervise the installation of the G-SKY Green Wall Panels System to ensure that no damage occurs to the wall that could affect the waterproofing warranty.
- B. Immediately notify [the consultant] and [the owner] in writing in case of damage to the wall.

3.04 METHOD OF INSTALLATION

- A. Install access scaffolding according to the safety guidelines and requirements as dictated by the local, regional, state or federal building council.
- B. Ensure that the work site ambient temperature is at least 10°C and that the site ambient temperature is high enough after the vegetation is installed to prevent frost damage.

3.05 WORK EXECUTION RECOMMENDATIONS

- A. Maintain equipment and tools used to install the G-SKY Green Wall Panels in good condition.
- B. Ensure that during use of equipment and tools, watertightness of the wall will not be compromised in any way.

3.06 FRAME & WEDGE ANCHOR INSTALLATION

NOTE: Coordinate with the original building envelope contractor to ensure that the watertightness of the wall will be maintained with the G-SKY Green Wall Panels System installed.

No bolt installation should take place below -10°C (14°F). Make all efforts to ensure that installation takes place under dry conditions.

- A. Prepare the surface.
 - 1. Clean wall surface. Repair any cracks in the concrete and receive approval from a structural engineer that crack repair is sufficient to allow installation of Green Wall Panels System.
- B. Install Frame
 - 1. POSITION BOLTS: Begin by marking the starting frame area on the wall and the first bolt position as dictated on the frame drawings.
 - 2. DRILL HOLE: Using an impact drill, drill a 5/8" hole 2 1/2" deep.
 - 3. CLEAN HOLE: Clean the hole with a brush and then blow it out with a purging pump.
 - 4. INSTALL ANCHOR: Drive the GW:WA12334 into the hole until the surface collar is reached.
 - 5. MARK FRAME BOLT PLACEMENTS: Position corresponding GW:FRxx to installed anchor and mark the next bolt placements.
 - 6. INSTALL REMAINING ANCHORS: Repeat steps 2~4 for remaining bolt holes on frame.
 - 7. INSTALL NEOPRENE WASHERS: Slide neoprene washers, GW:NPW12, over the installed wedge anchors, GW:WA12334
 - 8. ATTACH FRAME: align frame, slide over anchors and secure to anchors using supplied washer and bolts.
 - 9. Repeat steps 1~7 for all frames.

3.07 PANELS AND IRRIGATION INSTALLATION

1. Feed GW:TLCV6025 line (part of irrigation kits) header from irrigation water source and control box to the base of the first panels to be installed.
2. Install a single planted panel to a frame and install PVC header line along side of panels.
3. Cut irrigation pvc header line and install a PVC Tee to feed GW:TLCV6025 along the top of the panels.
4. Cut GW:TLCV6025 line to leave 70mm of open line inbetween first emitter and GW:TLMLA connection to the end of the cut GW:TLCV6025.
5. Attach the assembled GW:TLMLA + GW:TLCV6025 to the PVC Tee.
6. Run GW:TLCV6025 line inside the top irrigation line groove of the planted panels.
7. Continue to install panels and feed irrigation line into the top groove until the end of the wall section is reached.
8. If the end of the wall section does not connect with another irrigation header line (see detailed irrigation spec), cut and double-back the line 70mm with GW:TL8.
9. If the end of the wall section connects with a header line, install header line Tee insert to GW:TLMLA and connect.
10. Repeat Steps 2~8 until all panels are installed.
(Note: the last line of panels irrigation header to drip line must be attached using a elbow insert and not a T insert.)

3.08 CLASP INSTALLATION

1. Using included bolt and nut, align clasp to top of frame and attach GW:CLASP along the top line of planted panels to frame to secure panels from lifting.

3.09 GUTTER INSTALLATION

1. Insert two typical gutter securing brackets onto the bottom edge of planted panels so as to fit the length of each elevation of panels. Insert at least one gutter securing bracket per every 3 panels.
2. Cut, cap and/or couple gutter to fit each elevation of panels, use typical eave gutter material.
3. Attached a downspout from the gutter to the designated drainage area as dictated by the drawings to expel water.
4. If necessary attach downspouts from one gutter to the next on cascading elevation systems.

NOTE: Due to the several drainage options, this is only a suggested option for a system without an additional drainage system built below the panels.

3.10 POST-INSTALLATION IRRIGATION AND INSPECTION PERIOD

- A. Fully saturate the soil once a day for the first week of installation. Thereafter, water as dictated by Appendix A - Maintenance.

- B. Diligently maintain the plants for thirty (30) days post-installation and acceptance of installation. Thereafter, adhere to the maintenance schedule outline in Appendix A.

3.11 ACCEPTANCE

- A. Inspection to determine acceptance of installation will be made by the Owner, upon Contractor's request. Provide notification at least seven (7) working days before requested inspection date.
- B. Upon acceptance, the Owner will assume maintenance tasks unless a maintenance contract is entered into forthwith.

3.12 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work. Remove all excess materials, debris and equipment from the site. Repair any damage that has resulted from installation. .

NOTICE: G-SKY reserves the right to alter the composition and conditions of use of its materials without notice as knowledge and techniques evolve.

END OF SECTION

APPENDIX A - MAINTENANCE

The first year of a Green Walls life is the most important. Roots are further established and the Green Wall medium settles with the pressures of the local environment.

The Green Wall Panels System has three maintenance categories:

1. Building Inspection and Maintenance
2. Plant Inspection and Maintenance
3. Drainage and Irrigation Inspection and Maintenance

1. Building Inspection and Maintenance

The security of the watertightness of the wall is the most essential element to a successful Green Wall. Should plants die, they can easily be replaced, but should the building leak, repairs are difficult and expensive.

Building Inspection Items

	Inspection Items	Recommendations	Necessary Actions
Wall	Inside building, check entire wall surface for water seepage or water damage of any kind.		Repair any and all damage to membrane without delay.
	Check along Green Wall edges for physical damage, water seepage or membrane peeling.		
	Outside of Green Wall area, check for physical damage, water seepage or membrane peeling.		
	Check for roots escaping and damaging the wall	Remove roots and all invasive plant species. Replace plant species with non-invasive plant species.	Repair any and all damage to wall without delay.
Drains	Check for accumulation of fallen leaves, mud, soil and weeds in the drain.	Remove and clean.	
Gutters	Check for the accumulation of fallen leaves, mud, soil and weeds in the drain.	Remove and clean.	

Building Inspection Schedule

	Green Wall Panel System
Inspection 1	March or April
Inspection 2	June or July
Inspection 3	August or September
Inspection 4	October or November

It is generally agreed that a wall reasonably constructed under normal working conditions might have some flaws. For this reason, the industry accepts a “testing out period” of two to four full years. Long experience confirms that two to four complete weather cycles will bring out most flaws. Inspections can be reduced to twice a year after the fourth year, but it is still necessary to continue inspections and maintenance to ensure and to obtain the maximum life possible from the building.

Building Inspection Costs

For buildings with up to two (2) wall areas (of any size) there is a minimum charge from Green Roof Tops to inspect the wall of \$250.00 per inspection, or \$1,000.00/year. If a building has three (3) or more walls, the charge is \$150/wall/inspection. This price is based on walls below 10m (30ft). 10m+ high walls have safety and access considerations that require a customized quotation.

If repairs are covered by warranty, there will be no costs associated with repairs. In all non-warranty cases, a detailed repair quotation will be drawn up and presented to the owner.

2. Plant Inspection and Maintenance

Plant Inspection Items

	Inspection Items	Recommendations	Necessary Actions
General Gardening	Check for damage to soil bags and if there are any adverse plant growth problems related.	If bag is damaged, replace.	
	Check for weeds growing among the plants.	Remove by hand. If necessary use a chemical to destroy the weed.	
	Check plant growth condition. Are they healthy?		Fertilize them and/or complimentary planting
	Check for dead plants.	If negligible, remove the Plants and replant.	Remove the defeated species and re-plant with different species.
	Check for signs of disease or pest damage	Remove and clean.	Introduce a natural predator (i.e. ladybugs) or if problem is severe, spray with chemical insecticide.
	Check soil for erosion and for signs of soil overflow on surface of the panels	Add erosion controls. i.e. new non-woven soil bag	If erosion is affecting plant growth, replace panel
	Check for uncontrolled or over-growth.	Prune and train accordingly as to control and not promote growth.	Remove excess plant Material.
	Are there any additional concerns?		

Plant Inspection Schedule

	Grade 1	Grade 2
Inspection 1	January	January
Inspection 2	March	February
Inspection 3	May	March
Inspection 4	July	April
Inspection 5	September	May – Week 1
Inspection 6	November	May – Week 3
Inspection 7		June – Week 1
Inspection 8		June – Week 3
Inspection 9		July – Week 1
Inspection 10		July – Week 3
Inspection 11		August – Week 1
Inspection 12		August – Week 3
Inspection 13		September – Week 1
Inspection 14		September – Week 3
Inspection 15		October
Inspection 16		November
Inspection 17		December

The plants from the planted panels plant list are specially selected to require little maintenance. During the first two years of plant establishment in their new environment, it is necessary that six (6) visits per year for five (5) years be made to ensure a healthy and sustaining plant environment has been created. Thereafter, visits may be reduced to four (4) visits a year.

Plant Inspection and Maintenance Comprehensive

Weeds

By definition a weed is a plant that grows where you do not want it to. The Green Wall Panels System provides a weed barrier that makes it difficult for weeds to take root; however, weeds still take root and grow in the panels. Weeds can be carried to the Green Wall on the wind or by birds that visit the wall. Weeding must take place on a regular basis. Weeding is performed either by hand or through the use of an herbicide.

Growth Conditions

Slow or diseased growth must be removed to ensure the healthy growth of the Green Wall. Each Green Wall is different; the underlying wall surface, microclimate, physical size all affect how the plants grows. The Green Walls need to be checked regularly in order to ensure healthy growth.

Plant Loss

There are many circumstances under which plant loss may occur. During a period of plant loss, the cause of the loss will be investigated and a measure devised to avoid further loss. If a large section of planting or a particular species is lost, complementary planting will be performed.

Fertilizer

The plants we approve for Green Wall installations are very hardy, but still need nutrients to stay healthy. A Green Wall Panels System should be fertilized once a year with a low-concentration, liquid feed fertilizer. The amount of fertilizer added to the plants on the wall should be on the mid to low fertilization recommended level to control growth.

Pruning

Trimming back over-growth of the wall will help to ensure that all the plants have enough room to grow without crowding. If a single plant exceeds 200mm in length it has usually over-grown its desired size and needs to be cut. Trimming plants also helps to promote transpiration. However, trimming can also promote growth in some plants, so great care must be taken when selecting the plants that need to be trimmed.

Disease and Pests

Pests:

The various pests that exist varies greatly per the plants selected for the Green Wall. Pests can usually be controlled using environmentally friendly options if caught early. However, should the problem be exasperated beyond natural solution control, a chemical treatment will need to be applied in order to prevent pests from destroying the entire Green Wall. This is a last resort however; often the pests will not harm the system to the extent that makes this necessary and will die out through the winter.

Diseases:

Each disease has different treatment options which will be explored upon detection.

NOTE: Diseased plants will not be replaced with the same species since the disease may still exist in the soil structure and affect the replaced plant resulting in an additional plant loss.

3. Drainage and Irrigation Maintenance

Drainage and Irrigation Inspection Items

	Inspection Items	Recommendations	Necessary Actions
Drainage Points	Check for accumulation of fallen leaves, mud, soil, and weeds at all drainage points throughout the Green Wall system.	Remove and clean.	
Automated Irrigation	Check for blocks or breaks in the irrigation hose.	Inspect the line flushing valve.	Exchange faulty irrigation timers and valves with new ones.
	Check to ensure the electromagnetic valve is operating properly.	Perform a general operation test.	
	Check for problems with the filter, low volume control and pressure regulator.	Perform a general operation test.	
	Check for problems with the air/vacuum relief valve and line flushing valve.	Perform an general operation test	
	Check for problems with the timer, power and battery system	Perform an general operation test	
	Check to ensure the irrigation timing is set correctly for proper health growth	Perform an general operation test	

Drainage and Irrigation Inspection Schedule

	Green Wall Panels System
Inspection 1	March or April
Inspection 2	July or August

Drainage and Irrigation Inspection and Maintenance Costs

Each drainage and irrigation inspection has a fixed cost of \$75.00/visit, no matter what the site size. The cost of water will be dictated by the size of the job and number of hours of required irrigation for healthy plants.

Irrigation Schedule

	Green Wall Panels System
Irrigation Schedule	Once or twice a week during hot season depending on plant species requirements, more often if the plants are withering from full sun exposure. Once a week during cool season, enough to keep the soil damp. Soil moisture sensors will detect if rain has penetrated the system and will not activate the irrigation if it is not required.

Drainage and Irrigation Inspection and Maintenance Comprehensive System Barriers

The barrier of the system is checked for damage and over-growth of roots, soil loss or compaction and proper drainage.

Drains and garbage

Ensure that the drains are not clogged and that there is no rubbish around the drain. Damaged or dead plant material will be cleared from the wall.