




*Learning
Analysis
&
Course Plan*



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Summary of Services



Summary of Services

In June 2021, Anchored Training and Client partnered to create a plan for the Clean Construction E-Learning Course. The purpose of this project included Anchored Training providing guidance and recommendations on delivering

- A relevant e-learning course on clean construction.
- Provide a comprehensive course plan, also known as a 'Course Blueprint.'
- Provide guidance on the types of interactivity needed within the e-learning course.
- Determine engagement techniques to retain course participants.
- Create a plan for an e-learning course that meets objectives and purposes.

Anchored Training focused on three key strategies to accomplish this task:

1. Partnered with client to conduct a Learner Analysis.
2. Develop a comprehensive e-learning course plan, based on findings from the Learner Analysis.
3. Recommending possible platforms for hosting the complete e-learning course.

LEARNER ANALYSIS

The learner analysis included surveys and group interviews. Surveys were developed for client, along with user instructions, and sent to four client cities, including:

- San Francisco, USA
- Medellin, Colombia
- Milan, Italy
- Qingdao, China

Live group interviews were conducted with

- San Francisco, USA
- Medellin, Colombia

The complete analysis and findings from the surveys and interviews are located in the Learner Analysis section of this document.

LEARNER PROFILE

Using information from the learner analysis, a learner profile has been created to determine the course structure and delivery. All learning design decisions were based on the characteristics defined in the learner profile.

The complete learner profile is located in The Learner Profile section of this document

THE COURSE PLAN

The content for the course plan was provided by client during the knowledge transfer meeting. Information from the learner analysis has been used to determine how to focus, engage, and motivate learners. This includes information on how to structure the content, the type of format to present information, and actions that can be used to motivate learners to apply the information to their current job roles.

The complete course plan is located in The Course Plan section of this document

PLATFORM RECOMMENDATIONS

The final section of this document includes platform recommendations for the e-Learning course. Based on findings from the learner analysis and the structure of the course identified in the course plan, Anchored Training has recommended different digital tools and platforms. Each tool aligns to the goal of creating an e-learning course that is focused, engaging, and motivates learners.

Platform recommendations are located in the Platform Recommendations section of this document.

Learner Analysis



Learner Analysis

Survey Responses

English Survey: 14 | Spanish Survey: 10 | Italian Survey: 1 | Chinese Survey: 6

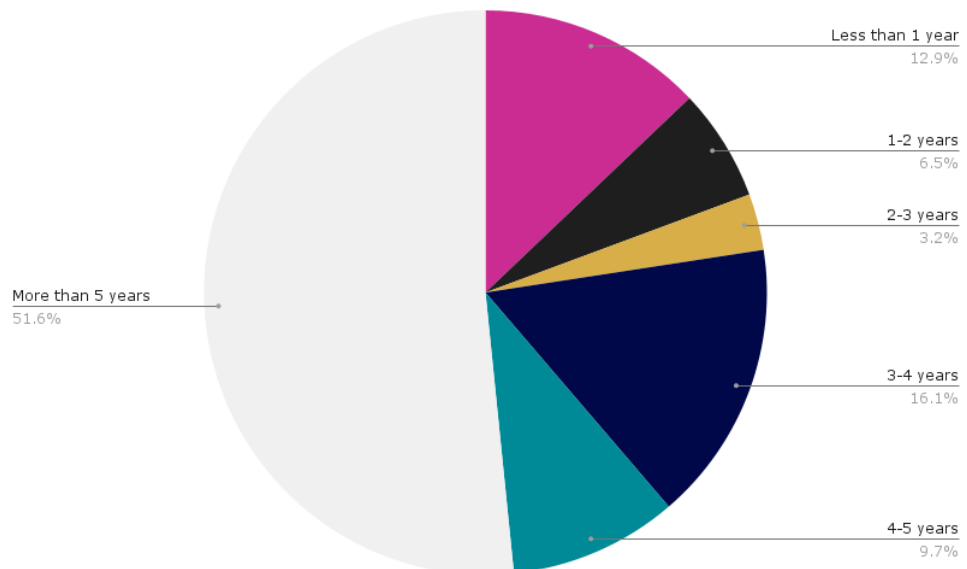
Total Responses: 31 responses

JOB TITLES

- Project Development Officer V
- Senior Policy Officer Circular Economy
- EMS II
- Acting Asst. Div. Chief Bgmd
- Environmental
- Financial Analyst III
- Project Development Officer 1
- Sr Green Building Coordinator
- Director of Urbanistic Direction, Municipality of Milan
- Architect
- Acting Admin Officer
- Intern
- Staff of International Cooperation Dept
- Manager/ Associate Researcher
- Planning Assistant
- MI
- Architect
- University Professional
- Biologist
- Environmental Systems Engineer
- Civil Engineer
- Environmental Engineer. Geographer
- Architect
- Environmental Engineer
- Environmental Engineer- Geographer
- Assistant Engineer
- Section Chief
- Engineer

How long have you worked for the city or with the city?

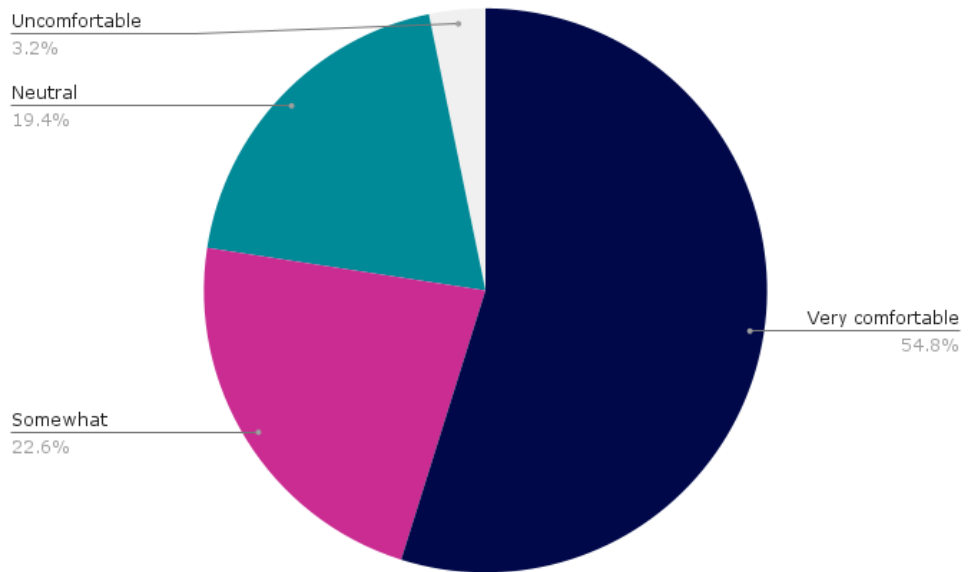
	English	Spanish	Italian	Chinese	Total
Less than 1 year	2	0	0	2	4
1-2 years	1	1	0	0	2
2-3 years	1	0	0	0	1
3-4 years	4	1	0	0	5
4-5 years	1	1	1	0	2
More than 5 years	5	7	0	4	16



Learning Preferences

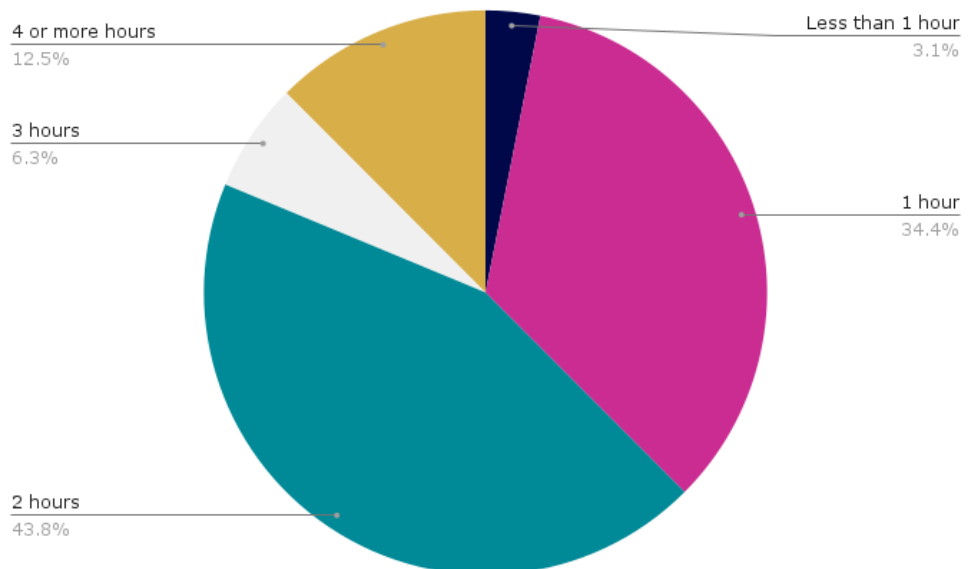
How comfortable are you with taking an online or eLearning course?

	English	Spanish	Italian	Chinese	Total
Very comfortable	6	7	1	3	17
Somewhat comfortable	3	3	0	1	7
Neutral	4	0	0	2	6
Uncomfortable	1	0	0	0	1
I have never taken an online or eLearning course	0	0	0	0	0



How much time can you devote to this type of training during a typical week?

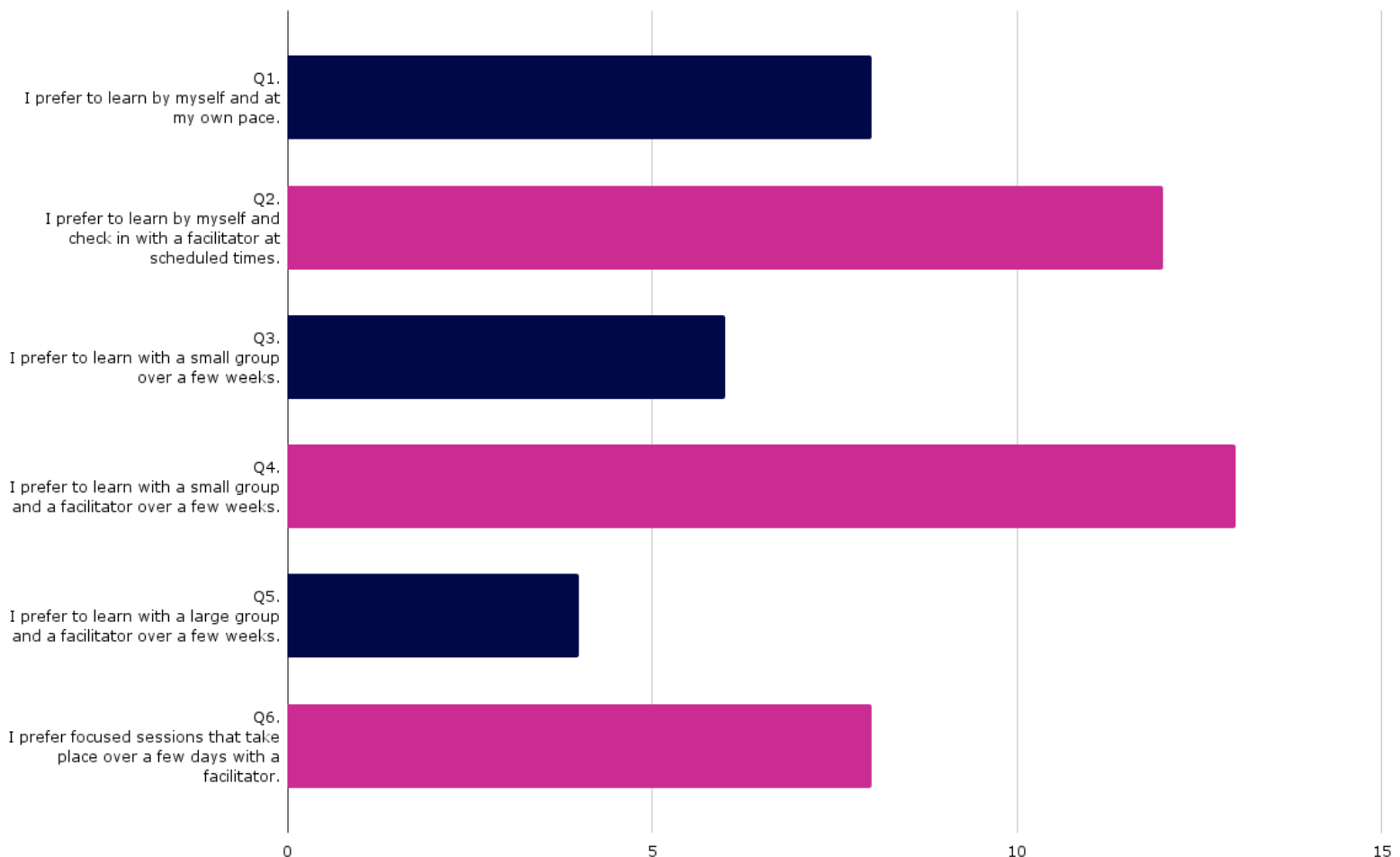
	English	Spanish	Italian	Chinese	Total
Less than 1 hour	1	0	0	0	1
1 hour	7	1	1	2	11
2 hours	5	6	0	3	14
3 hours	1	1	0	0	2
4 or more hours	1	2	0	1	4



Learning Preferences

What is your preferred method of learning (choose all that apply).

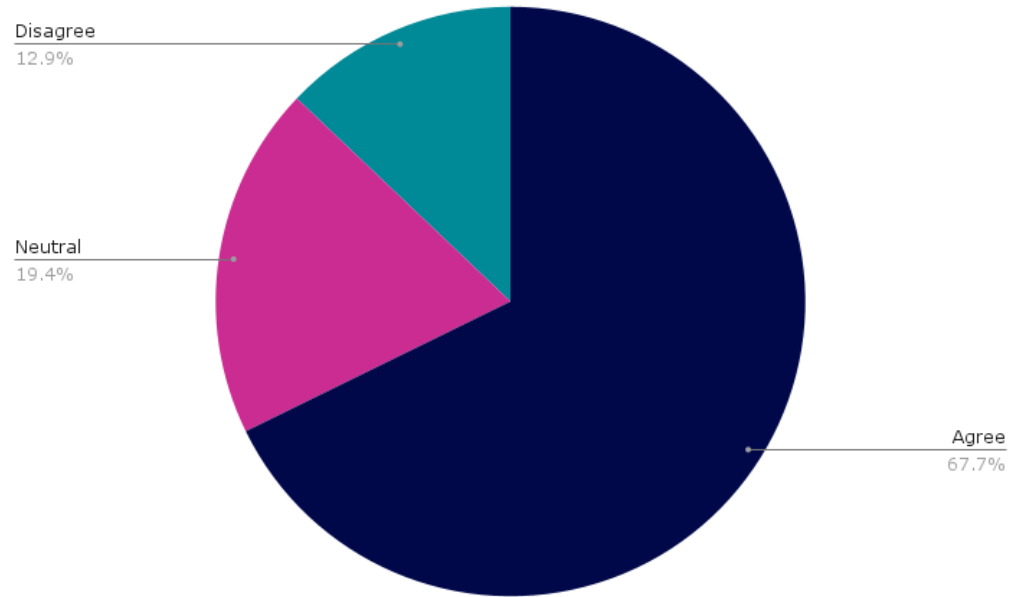
	English	Spanish	Italian	Chinese	Total
Q1. I prefer to learn by myself and at my own pace.	4	2	0	2	8
Q2. I prefer to learn by myself and check in with a facilitator at scheduled times.	4	5	0	3	12
Q3. I prefer to learn with a small group over a few weeks.	2	2	0	2	6
Q4. I prefer to learn with a small group and a facilitator over a few weeks.	8	4	0	1	13
Q5. I prefer to learn with a large group and a facilitator over a few weeks.	3	0	0	1	4
Q6. I prefer focused sessions that take place over a few days with a facilitator.	4	3	1	0	8



Knowledge Base

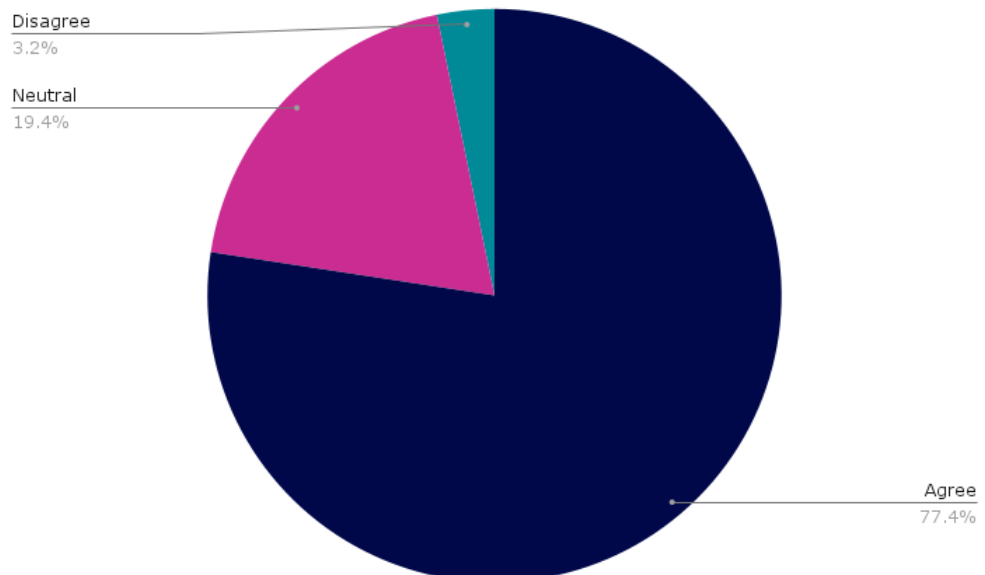
I am familiar with basic construction terms and concepts (examples may include: reinforced concrete, infrastructure, modular design, and prefabrication).

	English	Spanish	Italian	Chinese	Total
Agree	8	8	0	5	21
Neutral	2	2	1	1	6
Disagree	4	0	0	0	4



I am familiar with basic environmental terms and concepts (examples may include: reinforced concrete, infrastructure, modular design, and prefabrication).

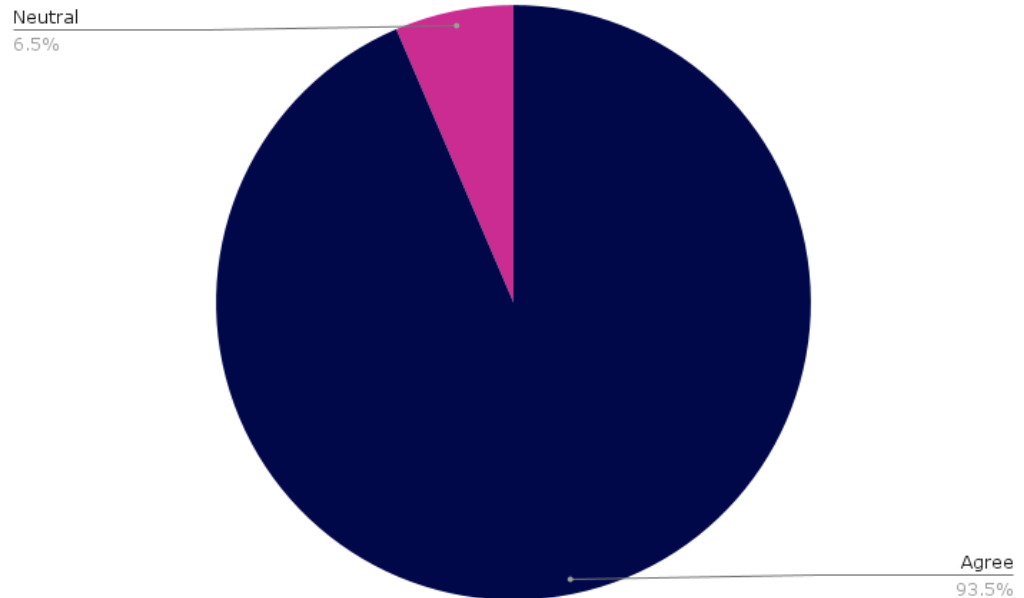
	English	Spanish	Italian	Chinese	Total
Agree	10	9	0	5	24
Neutral	3	1	1	1	6
Disagree	1	0	0	0	1



Knowledge Base

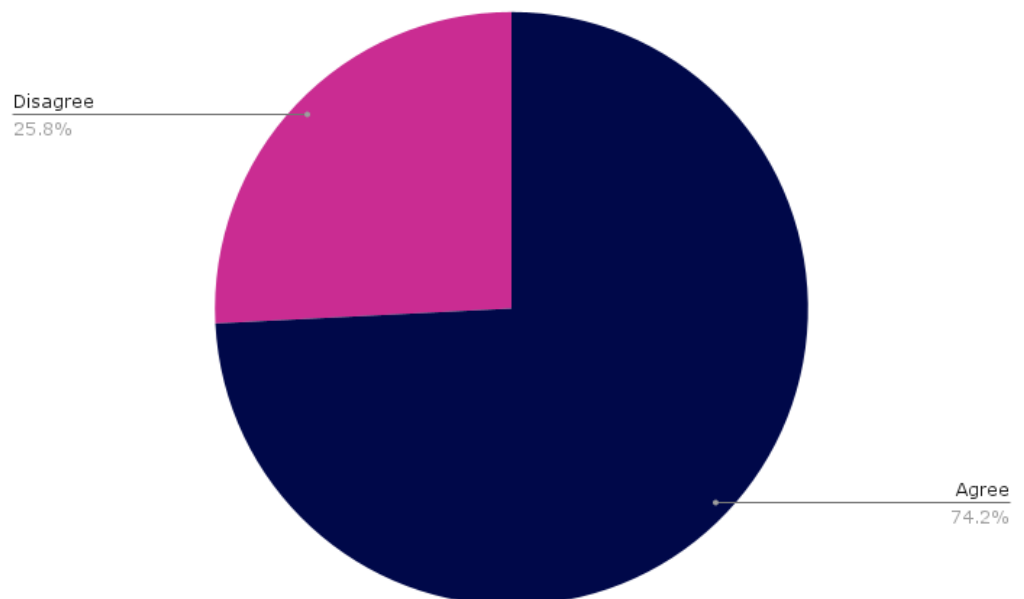
I am familiar with the climate priorities in my cities.

	English	Spanish	Italian	Chinese	Total
Agree	14	10	1	4	29
Neutral	0	0	0	2	2
Disagree	0	0	0	0	0



My role involves developing and implementing city policies

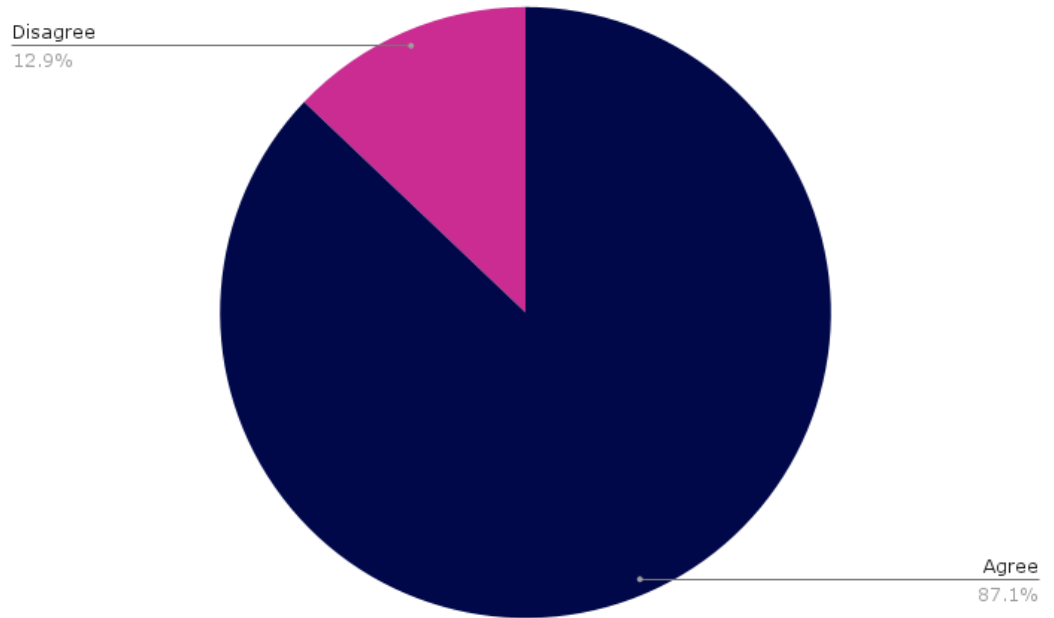
	English	Spanish	Italian	Chinese	Total
Agree	11	7	1	4	23
Disagree	3	3	0	2	8



Knowledge Base

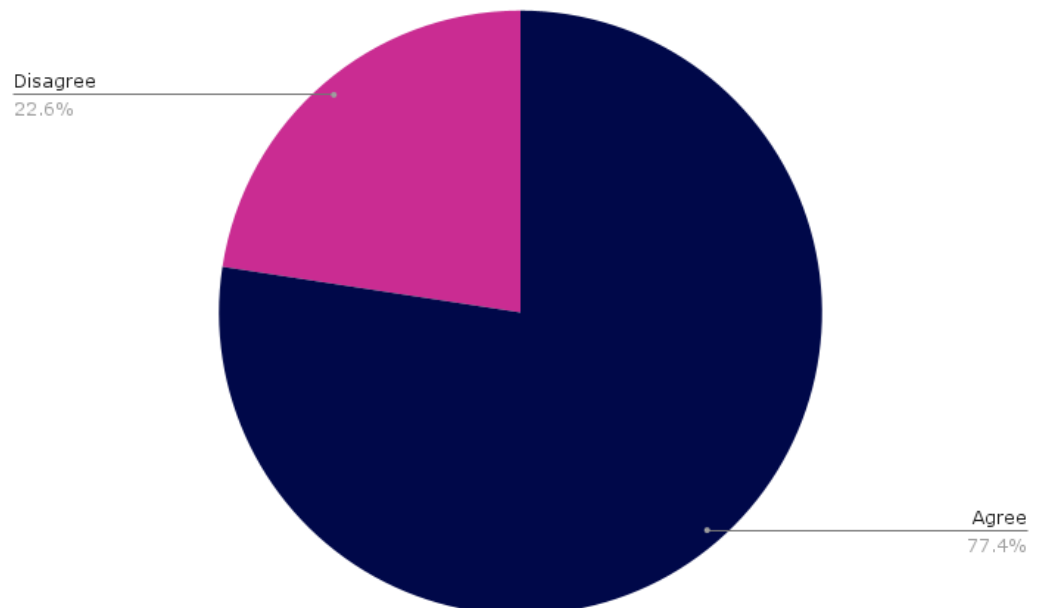
My role involves working with other departments to create policy roadmaps, policies, or initiatives.

	English	Spanish	Italian	Chinese	Total
Agree	11	9	1	6	27
Disagree	3	1	0	0	4



My role involves working with other departments to execute large projects.

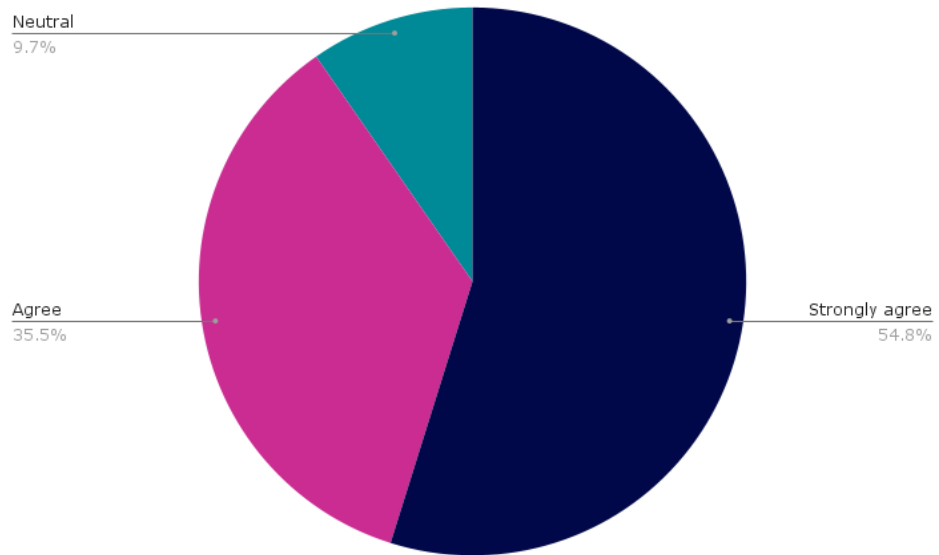
	English	Spanish	Italian	Chinese	Total
Agree	11	7	1	5	24
Disagree	3	3	0	1	7



Learning Topics

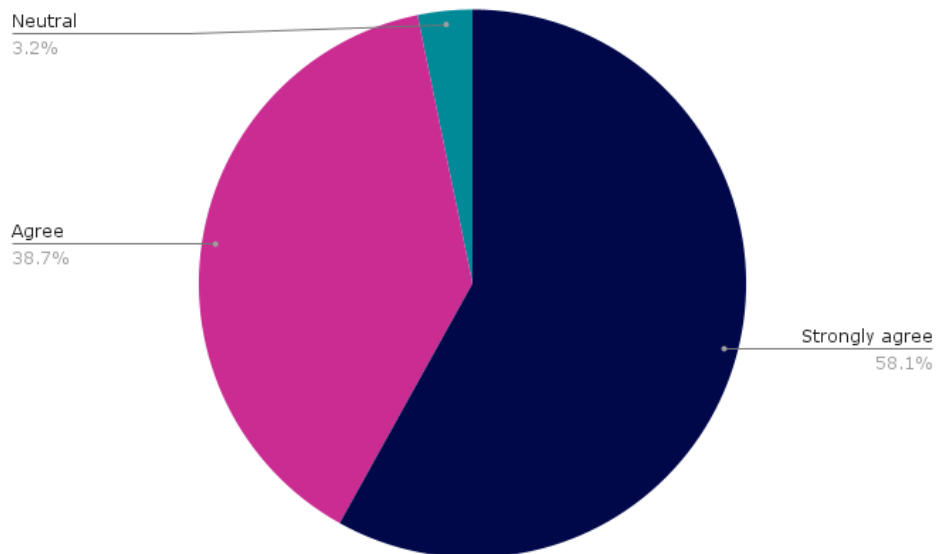
Understanding the negative impacts of our built environment, its construction on our city, and best practice for reducing these impacts is something I would like to know more about.

	English	Spanish	Italian	Chinese	Total
Strongly agree	5	8	0	4	17
Agree	8	2	0	1	11
Neutral	1	0	1	1	3
Disagree	0	0	0	0	0
Strongly disagree	0	0	0	0	0



We should do more to help city officials understand the negative impacts of our built environment, its construction on our city, and what can be done to reduce these impacts.

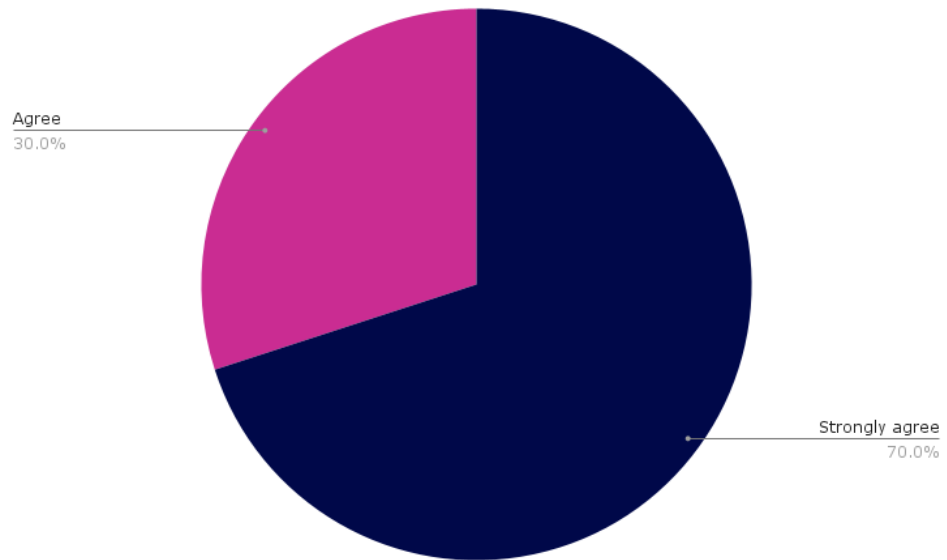
	English	Spanish	Italian	Chinese	Total
Strongly agree	8	7	0	3	18
Agree	6	2	1	3	12
Neutral	0	1	0	0	1
Disagree	0	0	0	0	0
Strongly disagree	0	0	0	0	0



Learning Topics

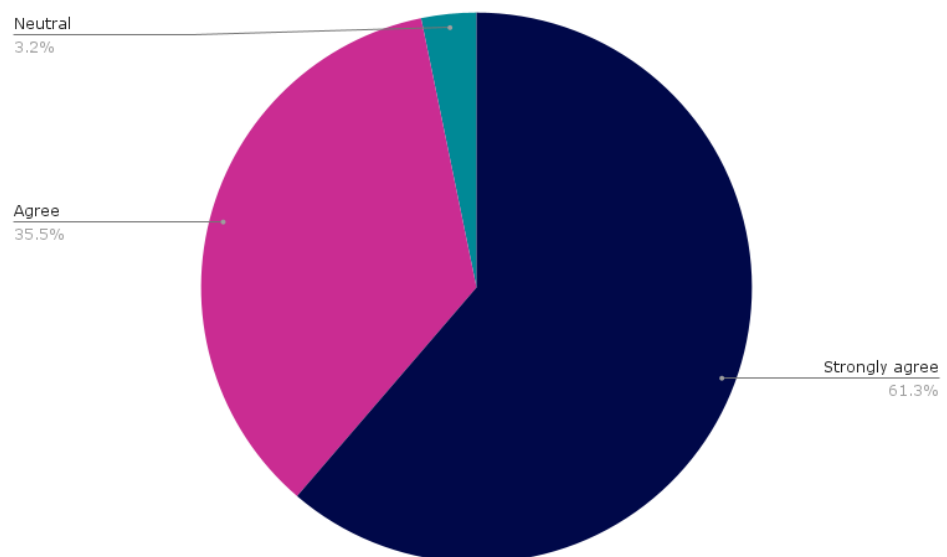
We should do more to help residents understand the negative impacts of our built environment, its construction on our city, and what can be done to reduce these impacts.

	English	Spanish	Italian	Chinese	Total
Strongly agree	8	9	1	3	21
Agree	6	1	0	2	9
Neutral	0	0	0	0	0
Disagree	0	0	0	0	0
Strongly disagree	0	0	0	0	0



I would like to learn more about how to convince stakeholders on the importance of the negative impacts of our built environment, its construction on our city, and the importance of their role in reducing this impact.

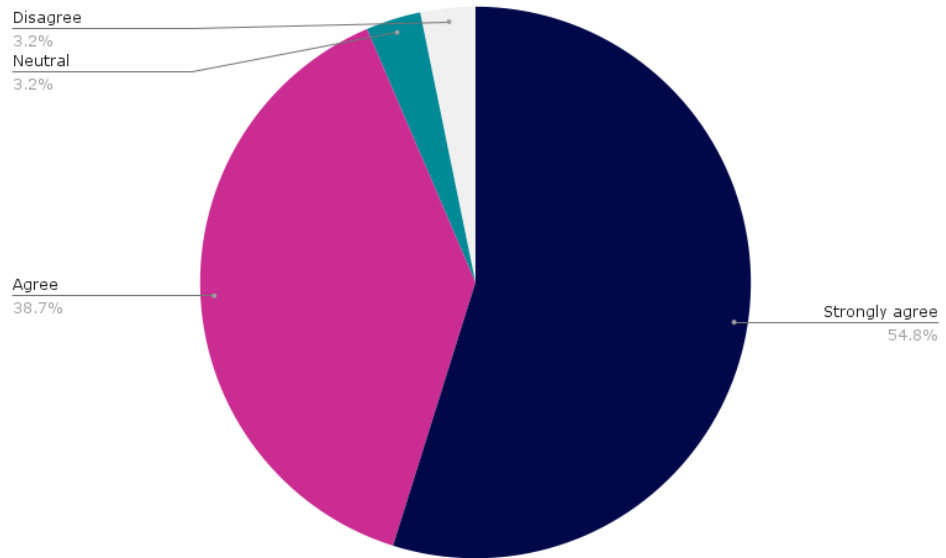
	English	Spanish	Italian	Chinese	Total
Strongly agree	7	8	1	3	19
Agree	6	2	0	3	11
Neutral	1	0	0	0	1
Disagree	0	0	0	0	0
Strongly disagree	0	0	0	0	0



Learning Topics

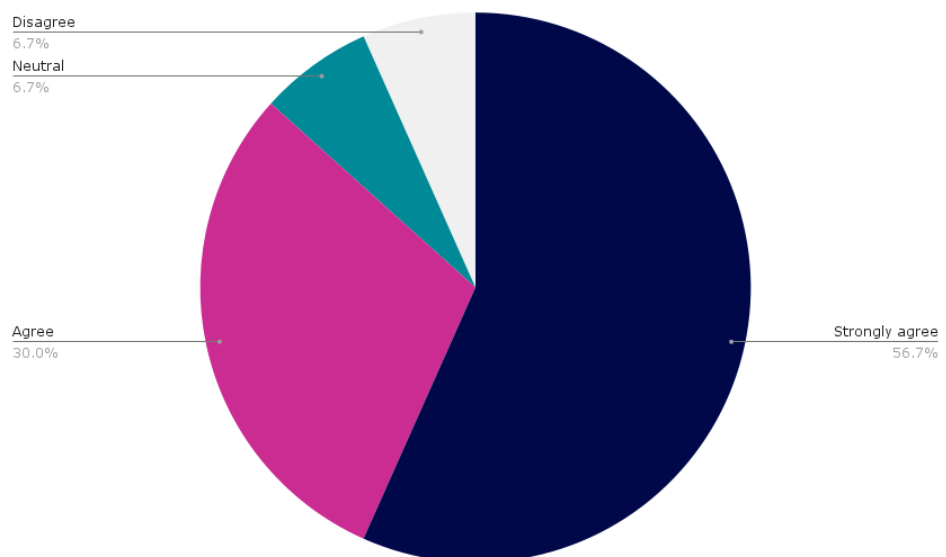
I would like to know more about how to work with other departments to advance city actions on construction.

	English	Spanish	Italian	Chinese	Total
Strongly agree	5	8	0	4	17
Agree	8	2	0	2	12
Neutral	1	0	0	0	1
Disagree	0	0	1	0	1
Strongly disagree	0	0	0	0	0



I would like to know more about how to integrate a transition to sustainable, resilient and just construction systems in my daily job.

	English	Spanish	Italian	Chinese	Total
Strongly agree	5	8	0	4	17
Agree	6	2	0	1	9
Neutral	2	0	0	0	2
Disagree	1	0	1	0	2
Strongly disagree	0	0	0	0	0



Learning Topics

Select the items below that you would be interested in learning more about.

	English	Spanish	Italian	Chinese	Total
Q1. Construction Basics	6	3	0	5	14
Q2. The Environmental Impact of Construction	11	8	0	4	23
Q3. Clean Construction	8	9	1	6	24
Q4. Emissions Their Effect on the Climate	7	5	0	4	16
Q5. Climate Science	3	0	0	3	6
Q6. Climates Effect on Health and Wellness	7	3	0	3	13
Q7. Climate Policy	7	2	0	4	13
Q8. The Role of Cities in Construction Practices	7	4	0	6	17
Q9. Collaborative Planning for City Employees	9	4	0	3	16
Q10. Actions Plans on Implementing Climate Policy	6	4	0	5	15
Q11. Collecting and Reporting Climate Policy Data	9	3	1	3	16



Key Findings

- Barriers to success for this project include:
 - Motivating learners to complete the training; and
 - Finding a connection between the learning and the learner's daily job duties.
- Majority of those interviewed agreed that a blended learning approach would be best. This would include interactive content available online. Then learners would have opportunities to meet with a facilitator and other stakeholders to discuss learning.
- Most learners report being able to dedicate 1-2 hours each week to learning.
- Content should be presented in a way that is:
 - Focused, engaging, and keeps learners motivated;
 - Organized into concentrated learning modules;
 - Can be easy to understand ; and
 - Allow the learner to immediately share their learning and guide others.
- This training should offer learners the opportunity to work with other departments and city stakeholders to take action steps.

Learner Profile



100% of learners agreed that their ideal structure for this e-learning program would include a blended learning approach.

Learner Profile

ANALYSIS OF LEARNER SURVEYS AND INTERVIEWS

- **77.4% of learners surveyed report they are somewhat comfortable or very comfortable taking an e-Learning course.**
- **13 out of 31 learners surveyed prefer to learn with a small group and a facilitator over a few weeks.**
- **78.2% of learners surveyed can dedicate 1-2 hours of their time each week to e-Learning.**

Based on the analysis, we have created the following profile that describes the learner that will be enrolled in this course. Learner characteristics include:

- The learner works in a city department or in a parallel role. Is in a leadership role, but not a top city official (i.e Mayor, Governor, City Director).
- The learner has most likely been in their position for more than 3 years.
- The learner is comfortable with e-learning.
- The learner is interested in sharing what they have learned on their own in facilitated sessions with other learners and have the time to learn from others and their experiences.
- The learner is willing to dedicate 1-2 hours each week to training.

The analysis helped us to understand the learner's background. We have found that he or she is familiar with basic construction terminology, environmental terminology, and climate priorities within their city. This information is important to their role, as they are involved with implementing city-wide policies. The learner is also collaborating with other departments to create policies, implement initiatives, and/or execute large projects.

Based on this analysis, it is Anchored Training's recommendation that a blended learning course be developed that help the learner to explore:

- Construction Basics
- The Environmental Impact of Construction
- Clean Construction
- Emissions Their Effect on the Climate
- The Role of Cities in Construction Practices
- Climates Effect on Health and Wellness
- Climate Policy
- Actions Plans on Implementing Climate Policy
- Collaborative Planning for City Employees
- Collecting and Reporting Climate Policy Data

Learner Profile

Further investigation of learning preferences in the live interviews found that 100% of learners agreed that their ideal structure for this e-Learning program would include a blended learning approach. Therefore, Anchored Training recommends the following structure:

- The course contains learning modules with 45-60 minutes of focused content that learners can access online on their own time at any time. Modules should be broken into individual topics that last no longer than 15-30 minutes. These topics are structured so that they start with the "bigger" picture and then narrow the focus down to the learner's role.
- To motivate learners to apply the learning to their job role, learners will need to connect with other learners to discuss their understanding of the content. They also need to see the bigger picture of clean construction and the return on their investment into clean construction.

Discussions can happen using two different methods:

- First, users may access a facilitated discussion using an online forum. The discussion forum provides an asynchronous opportunity for learners to share in their own time and at their own pace. A facilitator will provide prompts, feedback, and use best practices to keep the learners engaged and the conversation moving forward.
- Second, users may access a facilitated discussion using video conferencing software. The video software conference provides a synchronous opportunity for learners to share with others in real time. A facilitator will provide prompts, feedback, and use best practices to keep the learners engaged and the conversation.
- All learners will have the opportunity to reflect and prepare for facilitated discussions by having access to discussion prompts before scheduled discussion sessions.

The final recommendation for the learner is to provide a flexible environment where he or she may manage their own learning journey. This includes:

- Housing courses and content in a Learning Management System that allows the learner to return to the last point in their learning, track their progress, and receive evidence of learning (i.e. certificates and CEUs).
- Learners should be given control of their learning, but also have access to support when needed.

ADDITIONAL CONSIDERATIONS

Anchored Training recommends that the final e-Learning course is both accessible and responsive, including

- **The use of universal design practices are used to provide access for multiple learners.**
- **Learning is created in a way that is responsive to multiple devices.**

No matter who the learner may be, we believe all learners should have equitable access to learning opportunities.

The Course Plan



Learning Objectives

By the end of this training, learners should be able to

- Consider the impact construction has on our cities (Phase 1).
- Discover hidden embodied emissions and its link to current job roles (Phase 2).
- Discuss actions to define and measure embodied emissions in the built environment on a city scale (Phase 2).
- Identify carbon intensive construction materials (Phase 3).
- Explore alternative solutions to carbon intensive materials (Phase 3).
- Discuss ideas to help residents make better construction choices (Phase 3).
- Determine key stages of the construction process to reduce embodied carbon emissions (Phase 4).
- Identify baselines and benchmarks that can be used to identify embodied carbon in the built environment (Phase 4).
- Discuss steps city departments can take to reduce emissions from construction sites (Phase 4).
- Determine where embodied carbon fits into the city circular economy strategy (Phase 5).
- Discuss the use of Life Cycle Assessments and Environmental Product Declarations in measuring embodied emissions (Phase 5).
- Create a plan of action to address the reduction of embodied emissions in your city (Phase 5).

Phase 1

DESIGN NOTES

- Phase 1 is a video with a 'marketing' feel to gain buy-in from learners.
- Should be used as the course 'preview' to allow users to get excited about the course content.

Phase 1: Introduction

In this phase, the learner will

- Consider the impact construction has on our cities.

Expected Learning Time: 5-10 minutes

Module #	Module Outline	Interactions	Length
Module 1.1 – Video	<ul style="list-style-type: none"> • What kind of impact is construction happening on our cities? <ul style="list-style-type: none"> ○ As our cities grow, so does the need for infrastructure ○ Urban growth figures ○ Global and regional/local examples • Construction sector contributes to the climate and ecosystems crises <ul style="list-style-type: none"> ○ Global figures on emissions: 23% + concrete/steel % ○ Global figure on resource consumption, example on how sand/ water needed for cement contribute to ecosystem collapse • Construction impacts more than just our infrastructure, it impacts the people in cities: <ul style="list-style-type: none"> ○ Air and noise pollution ○ Congestion ○ Urban heat island effect ○ Increased heat and flood risks • The most vulnerable communities are affected and link with housing crisis • How cities contribute to the current situation and how they can play a role to improve the issues raised: transitioning towards clean construction. • In this training, we will explore the answers to questions, such as: <ul style="list-style-type: none"> ○ Why should cities tackle hidden construction emissions? ○ How do you define and measure embodied emissions in the built environment? ○ What is the construction process? ○ Why are construction materials so carbon intensive? ○ Are there alternatives to carbon intensive construction materials? ○ How can cities reduce embodied carbon emissions? ○ What steps can cities take to reduce emissions from construction sites? 	Video	5-10 Minutes

Phase 2

DESIGN NOTES

- Phase 2 will take place over 1 week, but the timeline may be extended.
- Participants are expected to work through 2 e-learning modules on their own.
- Participants should choose one Facilitated Lead Discussion in which to participate.
- Facilitated discussion prompts will be based on the discussions from the Module 2.2 Knowledge Check. Participants will have the opportunity to reflect and submit their thoughts in the e-learning module before discussion with a group of peers.

Note: Screenshots of the learning prototype developed for C40 can be found in Appendix A.

Phase 2: Embodied Emissions in the Built Environment

In this phase, the learner will

- Discover hidden embodied emissions and its link to current job roles.
- Discuss actions to define and measure embodied emissions in the built environment on a city scale.

Expected Learning Time: 2 hours

Module #	Module Outline	Interactions	Length
Module 2.1 – e-learning Why should cities tackle hidden construction emissions?	<ul style="list-style-type: none"> • Construction basics <ul style="list-style-type: none"> ◦ Introduction to the construction hierarchy 	Interactive Tabs	30 Minutes
	<ul style="list-style-type: none"> • What is clean construction? 	Text with Image	
	<ul style="list-style-type: none"> • Overview of the time value of carbon, life cycle emissions spike of individual projects, why action must happen now 	Text with Image and Video	
	<ul style="list-style-type: none"> • Overview of local benefits to make the case for action 	Interactive Tabs	
	<ul style="list-style-type: none"> • Knowledge Check 	Multiple choice quiz	
	Optional Materials <ul style="list-style-type: none"> • Further reading • Downloadable Resource 	External Links	

Phase 2

Module #	Module Outline	Interactions	Length
Module 2.2 – e-learning How do you define and measure embodied emissions in the built environment on a city scale?	<ul style="list-style-type: none"> Defining embodied emissions/embodied carbon 	Text with Image	30 Minutes
	<ul style="list-style-type: none"> Defining embodied energy 	Interactive Tabs	
	<ul style="list-style-type: none"> Defining whole life cycle emissions 	Interactive Tabs	
	<ul style="list-style-type: none"> High level Overview of what cities are used to measuring <ul style="list-style-type: none"> GHG inventories How they are calculated and what they capture 	Animated Video	
	<ul style="list-style-type: none"> Defining consumption emissions, what they are and how they differ from GHG inventories, and why they tend to be "leaky" 	Text with Image; Video	
	<ul style="list-style-type: none"> Links to C40 programmes that might need to be spelled out for C40 city contacts: TCI/CAPS 	External Links	
	<ul style="list-style-type: none"> Examples of embodied emissions from buildings and infrastructure are being measured on a city scale in cities right now 	Accordion	
	Knowledge Check: <ul style="list-style-type: none"> In your current position, have you ever considered embodied emissions and its effect on your city? Now that you are aware of embodied emissions, how does it affect your current position? What actions can you take to define and measure embodied emissions in the built environment of your city? 	Open Response Questions	
Optional Materials <ul style="list-style-type: none"> Further reading Downloadable Resource 	External Links		
Module #	Module Outline	Interactions	Length
Module 2.3 – Facilitator Lead Discussion	<ul style="list-style-type: none"> Option 1: Asynchronous Facilitated Discussion Option 2: Synchronous Facilitated Discussion <i>Note: Discussion prompts will be based on the Module 2.2 Knowledge Check.</i>	Option 1: Online Forum Option 2: Video Conference Software	60 Minutes

Phase 3

DESIGN NOTES

- Phase 3 will take place over 1 week, but the timeline may be extended.
- Participants are expected to work through 4 e-learning modules on their own.
- Participants should choose one Facilitated Lead Discussion in which to participate.
- Facilitated discussion prompts will be based on the discussions from the Module 3.4 Knowledge Check. Participants will have the opportunity to reflect and submit their thoughts in the e-learning module before discussion with a group of peers.

Phase 3: The Construction Process and Value Chain

In this phase, the learner will

- Identify carbon intensive construction materials.
- Explore alternative solutions to carbon intensive materials.
- Discuss ideas to help residents make better construction choices.

Expected Learning Time: 2 hours

Module #	Module Outline	Interactions	Length
Module 3.1 – e-learning Why are construction materials so carbon intensive? (Part 1)	<ul style="list-style-type: none"> • Global overview of the most used construction materials 	Interactive Tabs	15 Minutes
	<ul style="list-style-type: none"> • Concrete <ul style="list-style-type: none"> ○ How its made ○ How it is usually used ○ How it might fit into low embodied carbon future 	Video Labelled Graphic	
	<ul style="list-style-type: none"> • Steel <ul style="list-style-type: none"> ○ How its made ○ How it is usually used ○ How it might fit into low embodied carbon future 	Video Labelled Graphic	
	<ul style="list-style-type: none"> • Timber <ul style="list-style-type: none"> ○ How its made ○ How it is usually used ○ How it might fit into low embodied carbon future 	Video Labelled Graphic	
	Optional Materials <ul style="list-style-type: none"> • Further reading • Downloadable Resource 	External Links	

Phase 3

Module #	Module Outline	Interactions	Length
Module 3.2 – e-learning Why are construction materials so carbon intensive? (Part 2)	<ul style="list-style-type: none"> Insulation <ul style="list-style-type: none"> Impact of use Choices of materials The future of Insulation in our city 	Video Labelled Graphic	15 Minutes
	<ul style="list-style-type: none"> MEP <ul style="list-style-type: none"> What is it? Impact of use The future of MEPs in our city 	Text with Images; Accordion; and Links to Case Studies	
	<ul style="list-style-type: none"> Fit Out <ul style="list-style-type: none"> What is it? Impact of use The future of Fit Out in our city 	Text with Images; Accordion; and Links to Case Studies	
	Optional Materials <ul style="list-style-type: none"> Further reading Downloadable Resource 	External Links	
Module #	Module Outline	Interactions	Length
Module 3.3 – e-learning Why are current design processes so carbon intensive and what are the alternatives?	Module Outline/Interactions <ul style="list-style-type: none"> Why are these design choices impactful in individual projects <ul style="list-style-type: none"> Review current situations 	Image with Text; Interactive Tabs	15 Minutes
	<ul style="list-style-type: none"> What are the solutions to the overdesign of structural materials? 	Text with Images; Accordion	
	<ul style="list-style-type: none"> What does it mean to build light and lean? 	Text with Images	
	<ul style="list-style-type: none"> What is offsite construction? <ul style="list-style-type: none"> What is modular construction How are both currently used? How can it be leveraged for zero emission construction? 	Interactive Tabs	
	<ul style="list-style-type: none"> What is a DfD? <ul style="list-style-type: none"> How is it currently used? How can it be leveraged for zero emission construction? 	Text with Images	
	<ul style="list-style-type: none"> Knowledge Check 	Multiple choice quiz	

Phase 3

Module #	Module Outline	Interactions	Length
Module 3.4 – e-learning How do cities help residents make better construction choices?	<ul style="list-style-type: none"> ● Example construction process steps <ul style="list-style-type: none"> ○ Key stakeholder groups ○ Who has responsibility at what stage 	Labelled Graphic	15 Minutes
	<ul style="list-style-type: none"> ● Identifying where along the process different stakeholders <ul style="list-style-type: none"> ○ Who is responsible for climate goals? ○ At what stage do city departments become involved? 	Timeline	
	Knowledge Check: <ul style="list-style-type: none"> ● What construction materials have the most impact on your city? ● What alternative solutions to carbon intensive materials did you find most interesting and why? ● How can you share what you have learned with city residents to help them make better construction choices for your city? 	Open Response Questions	
	Optional Materials <ul style="list-style-type: none"> ● Further reading ● Downloadable Resource 	External Links	
Module 3.5 – Facilitator Lead Discussion	<ul style="list-style-type: none"> ● Option 1: Asynchronous Facilitated Discussion ● Option 2: Synchronous Facilitated Discussion <i>Note: Discussion prompts will be based on the Module 3.4 Knowledge Check.</i>	Option 1: Online Forum Option 2: Video Conference Software	60 Minutes

Phase 4

DESIGN NOTES

- Phase 4 will take place over 1 week, but the timeline may be extended.
- Participants are expected to work through 3 elearning modules on their own.
- Participants should choose one Facilitated Lead Discussion in which to participate.
- Consider awarding a Construction Champion badge for completion of Phases 1-4. May be automatically awarded in TalentLMS.
- Facilitated discussion prompts will be based on the discussions from the Module 4.4 Knowledge Check. Participants will have the opportunity to reflect and submit their thoughts in the e-learning module before discussion with a group of peers.

Phase 4: Options for the Built Environment

In this phase, the learner will

- Determine key stages of the construction process to reduce embodied carbon emissions.
- Identify baselines and benchmarks that can be used to identify embodied carbon in the built environment.
- Discuss steps city departments can take to reduce emissions from construction sites.

Expected Learning Time: 2 hours

Module #	Module Outline	Interactions	Length
Module 4.1 – e-learning How can cities use procurement to reduce embodied carbon emissions in the built environment?	<ul style="list-style-type: none"> • The construction hierarchy as it relates to clean construction 	Text; Labelled Graphic	15 Minutes
	<ul style="list-style-type: none"> • The bidding stage <ul style="list-style-type: none"> ○ How can cities reduce embodied carbon emissions at this stage? 	Interactive Tabs	
	<ul style="list-style-type: none"> • The design stage <ul style="list-style-type: none"> ○ How can cities reduce embodied carbon emissions at this stage? 	Text	
	<ul style="list-style-type: none"> • Knowledge Check 	Multiple choice quiz	
	Optional Materials <ul style="list-style-type: none"> • Further reading • Downloadable Resource 	External Links	

Phase 4

Module #	Module Outline	Interactions	Length
Module 4.2 – e-learning How can cities set and use baselines in the built environment?	<ul style="list-style-type: none"> What are baselines and benchmarks when it comes to identifying embodied carbon in the built environment? 	Text	15 Minutes
	<ul style="list-style-type: none"> What are the ways to set baselines and benchmarks? 	Interactive Tabs	
	<ul style="list-style-type: none"> What are whole life baselines? <ul style="list-style-type: none"> Benchmarks and how do they differ from material specific baselines/benchmarks? 	Image with Text	
	<ul style="list-style-type: none"> Knowledge Check 	Sorting Activity	
	Optional Materials <ul style="list-style-type: none"> Further reading Downloadable Resource 	External Links	
Module #	Module Outline	Interactions	Length
Module 4.3 – e-learning What steps can cities take to reduce emissions from construction sites?	<ul style="list-style-type: none"> How does planning and zoning policy impact the embodied carbon footprint of a city? 	Video	30 Minutes
	<ul style="list-style-type: none"> What are some of the most impactful zoning and planning choices? 	Text with Images	
	<ul style="list-style-type: none"> What are some best practice planning and zoning policies <ul style="list-style-type: none"> CNCA embodied carbon framework Alternative building practices State of NRMM market and low and zero emission construction site policy First steps towards change 	Text with Images; Accordion; and Links to Case Studies	
	Knowledge Check: <ul style="list-style-type: none"> What current construction practices does your city use that should be looked at more closely? At what step of the construction process can your department help reduce the embodied emissions of the built environment? What steps can you or your department take to reduce emissions from construction sites? 	Open Response Questions	
	Optional Materials <ul style="list-style-type: none"> Further reading Downloadable Resource 	External Links	
Module #	Module Outline	Interactions	Length
Module 4.4 – Facilitator Lead Discussion	<ul style="list-style-type: none"> Option 1: Asynchronous Facilitated Discussion Option 2: Synchronous Facilitated Discussion <i>Note: Discussion prompts will be based on the Module 4.4 Knowledge Check.</i>	Option 1: Online Forum Option 2: Video Conference Software	60 Minutes

Phase 5

DESIGN NOTES

- Phase 5 will take place over 1 week, but the timeline may be extended.
- Participants may choose to work through 3 elearning modules on their own.
- Participants may choose one Facilitated Lead Discussion in which to participate.
- Consider awarding a certificate of completion to learners that complete Phases 1-5. May be automatically awarded in TalentLMS.
- Facilitated discussion prompts will be based on the discussions from the Module 5.3 Knowledge Check. Participants will have the opportunity to reflect and submit their thoughts in the e-learning module before discussion with a group of peers.

Phase 5: Advanced Learning: Economic Impact and Strategic Influencing (Optional)

In this phase, the learner will

- Determine where embodied carbon fits into the city circular economy strategy.
- Discuss the use of Life Cycle Assessments and Environmental Product Declarations in measuring embodied emissions.
- Create a plan of action to address the reduction of embodied emissions in your city.

Expected Learning Time: 2 hours

Module #	Module Outline	Interactions	Length
Module 5.1 – e-learning How can cities integrate embodied carbon into their circular economy strategies?	<ul style="list-style-type: none"> • What is the circular economy? 	Circle with Text	15 Minutes
	<ul style="list-style-type: none"> • What are the climate benefits of applying circular economy principles? 	Numbered List	
	<ul style="list-style-type: none"> • What are the key areas to apply circular economy principles to the built environment? 	Interactive Tabs	
	<ul style="list-style-type: none"> • What are the key areas to apply circular economy principles to the built environment? 	Accordion	
	<ul style="list-style-type: none"> • Knowledge Check 	Sorting Activity	
	Optional Materials <ul style="list-style-type: none"> • Further reading • Downloadable Resource 	External Links	

Phase 5

Module #	Module Outline	Interactions	Length
Module 5.2 – e-learning How do you define and measure embodied emissions in the built environment on a project scale?	<ul style="list-style-type: none"> Life Cycle Assessments (LCAs) <ul style="list-style-type: none"> Overview of LCA tools available Certification and commitment overview When in the construction process are LCAs calculated? 	Text with Multiple Images; Animated List; Templates or Worksheets; and External Links	15 Minutes
	<ul style="list-style-type: none"> Environmental Product Declarations (EPDs) 	Images/Examples; Templates or Worksheets; and External Links	
	Knowledge Check: <ul style="list-style-type: none"> How can a LCA help your department measure embodied emissions in your city? What is the value of an Environmental Product Declaration to your city and its residents? 	Open Response Questions	
Module #	Module Outline	Interactions	Length
Module 5.3 – e-learning How can you make the case for addressing embodied emissions in your city?	<ul style="list-style-type: none"> How do you best make the case for action on clean construction in your city? <ul style="list-style-type: none"> Examples from other cities Clean city case studies 	Text with Image	30 Minutes
	<ul style="list-style-type: none"> Techniques: <ul style="list-style-type: none"> Connection to AQ Waste, adaptation 15-min city Green and just recovery + jobs 	Accordion	
	Knowledge Check: <ul style="list-style-type: none"> How can LCAs and EPDs be used along the project cycle? Write an action plan for your city on how you can address and make clean construction a part of your city. How will you bring together multiple city departments to implement this plan? 	Open Response Questions	
	Optional Materials <ul style="list-style-type: none"> Further reading Downloadable Resource 	External Links	
Module #	Module Outline	Interactions	Length
Module 5.3 – Facilitator Lead Discussion	<ul style="list-style-type: none"> Option 1: Asynchronous Facilitated Discussion Option 2: Synchronous Facilitated Discussion <i>Note: Discussion prompts will be based on the Module 5.3 Knowledge Check.</i>	Option 1: Online Forum Option 2: Video Conference Software	60 Minutes

FLEXIBILITY OF COURSE

For flexibility to allow for someone who could only do 1 hour a week, our recommendation would be to make any synchronous facilitated discussions voluntary. However, supplementing with the asynchronous facilitated platform would be a great ongoing option that allows learners to ask questions in the moment, or review questions that were asked in previous sessions.

Future Learning Opportunities

As per instructional design best practice, it is not advisable to include content for both beginner and climate change champions in one module.

Throughout this process, Anchored Training has identified topics that may be considered as part of future learning opportunities. These topics are not included in the course plan because they are considered too advanced for the learner identified in the Learner Profile section. These topics may be considered as an advanced training or may be targeted to an audience that includes top city officials (i.e Mayor, Governor, City Directors).

Topics include:

Applying the clean construction hierarchy

- Step 1 with best practice and benefits/ opportunities
- Step 2 with best practice and benefits/ opportunities
- Step 3 with best practice and benefits/ opportunities
- Step 4 with best practice and benefits/ opportunities

Enabling mechanisms

- Strategies and targets
- Pilot programs
- Early stakeholder engagement
- Voluntary schemes
- Governance and equity tools

Further analysis and communication with the identified audience is needed to determine the best course structure and delivery.

Platform Recommendations



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Providing a forum for city-industry dialogue.

Platform Recommendations

In order to host a focused, engaging, and motivating e-learning course, Anchored Training has recommended the following tools and resources.

Course Authoring Tool: Rise 360

Rise 360 is a tool that provides courses in a simple web page app. Rise 360 is a web app that lets you create beautiful, engaging, fully-responsive courses. Once courses are built in Rise 360, they may be hosted on websites or within learning management systems. Rise 360 is also easy to manage and make updates to content without too much time or additional cost.

Hosting Platform: TalentLMS

TalentLMS is a highly configurable cloud-hosted learning management system created to help users simplify how they facilitate online seminars, courses, and other training programs. The purpose of the learning management system is to provide a platform where user access may be tracked and certificates or gamification may be implemented automatically. Users may manage their own learning with the use of TalentLMS, however Anchored Training recommends a learning administrator is available to support learners throughout the course. The use of a learning management system will allow you to build upon the current training and allow you to award CEUs, certificates, and learning badges.

Learner Retention

The best method for learner retention is to showcase to the learners how the content is important to them, how it will assist them in performing their role, and the value of what is being taught. This should be done through the marketing video and in pre-training communications and a sentiment shared by leadership in the cities who oversee the learners. Other methods to ensure engagement/retention include:

HUMANIZE YOUR CONTENT

Personal narratives and talking to the learners on a peer to peer level rather than subject matter expert to learner is crucial. Learners should know they are part of their learning, feel like they are part of the learning and then they will be more invested in the learning.

GAMIFICATION

Methods such as earned badges allow learners to showcase their achievements to others in the organization, and/or on their LinkedIn profile

STORYTELLING/SCENARIO-BASED LEARNING

The reason we can remember the plot of a movie and not other information we learned is because of the use of storytelling. Storytelling and building scenarios that the learners will face when putting the learning into practice. This allows them to be better prepared when on the job, and has them put the learning into practice in a safe space and to get feedback from a facilitator, either live facilitator or through feedback prompts in the online learning based on the selection they make.

BRAINSTORMING/IDEA SHARING

As humans we are social creatures and learn a lot from peers and others in our community. By utilizing brainstorming and idea sharing with others, learners are able to view different perspectives and a value at Anchored Training is diversity of thought, and meeting with others encourages diversity of thinking.

LEARNING PATHS

Allow learners to see what they are working towards, and can include elements that are online, in class, as well as non-traditional learning methods such as reflections, worksheets, interviewing of subject matter experts, etc.

VISUAL AIDS

Although the foundational aspects will be learned through the elearning modules, it is important to always think about what learners will need in the moment to help them walk through a process. For example, checklists are always very helpful and can be hosted on platforms such as Knowledge Hub or TalentLMS so that it is one stop shopping for the learner.

PUTTING WORK INTO ACTION

As you can see, we have the creation of an action plan at the end of the last phase. This was very intentional as it is important to have the group putting the work into action and begin thinking about how they will use the learning in their city.

KNOWLEDGE CHECK/MARK OF COMPLETION RECOMMENDATIONS

Anchored Training believes that knowledge checks should be thought provoking, but not tricky. They should not be very easy to guess, but also not completely obscure and challenging. We prefer to utilize scenarios and application for knowledge checks and refrain from True/False type questions.

The standard for Mark of Completion and what we recommend is a score of 80% to pass.

Facilitated Discussions

The facilitated discussions should allow for more time for learners to reflect, discuss what they have put into practice, and have time to share ideas and receive feedback to help them through challenges they may face.

As part of both types of facilitated discussions, prompts would be provided to the facilitator to assist with the conversation.

In synchronous facilitated discussion, the group would be able to work and get feedback on their action plans, and work through scenarios to help prepare them for the work.

Asynchronous Facilitated Discussion: Slack

Slack is the recommendation for the asynchronous facilitated discussion. Slack is a messaging app that allows for multiple users to access. Slack allows for different "channels" to be used for different groups of learners and different discussion topics.

Synchronous Facilitated Discussion: Zoom

Zoom is the recommendation for the synchronous facilitated discussion. Zoom is a video conference software that allows users to join without an account. The facilitator may also lead large group discussions, or small group discussions using the breakout room feature.

KNOWLEDGE HUB

Knowledge Hub is the current platform client plans to host course content. Anchored Training's analysis of Knowledge Hub determined that the media and interactions supported by this website include: text, images, and videos. Interactions will need to be modified if course content is hosted on Knowledge Hub without the use of Rise 360. Rise 360 should be able to integrate into Knowledge Hub. If you use Rise 360 in a tool such as Knowledge Hub, you would not be able to track learner completion, nor would learners be able to track their progress if they need to close the site and return at another time. Anchored Training recommends client identify the goals and future vision for the course and other educational opportunities and make decisions around user tracking, ability to provide completion certifications, etc.

Next Steps

1. Identify the goal of course completion and tracking - do you want to track completion? Do you have the capabilities to track the course? Do you want to offer continuing education credits or badging?
2. Based on the answers in question 1 and other factors, decide on the appropriate learning platform
3. Storyboard development - work with the subject matter experts to design the content, streamlining the content, and identifying what specific content will be added for each section of the course plan
4. Design and develop all visual elements needed such as checklists, graphic, etc.
5. Develop content from approved storyboard in Rise 360
6. Develop facilitator guides for the workshops after each phase
7. Review and approve course
8. Load course on platform and pilot course with users from San Francisco, Medellin, Milan and Qingdao
9. Refine course materials based on pilot group feedback
10. Develop communications plan to launch course in other cities
11. Launch course for all cities and target learners
12. Evaluate course for effectiveness, appropriateness, and opportunities for improvements and/or additional training



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Proposal Recommendations

In analyzing client's need and the course plan, Anchored Training recommends the following to be part of the next proposal:

- Design of course content
- Development of course in authoring tool
- Learning Platform Setup and initial administration
- Facilitator Training
- Strategic Planning and Project Management

The range for a project of this size would be \$XXXX-\$XXXX.



Frequently Asked Questions

NOW THAT WE HAVE THE REPORT WHAT NOW?

Follow the above next steps list!

THIS SEEMS LIKE A LOT.

We know that's not a FAQ , but it may be what you are currently feeling. That is totally normal! Just take each piece step by step and that is why we recommend a phased approach and a pilot before a full launch so you can feel really solid on the curriculum and how it will work with your audience.

CAN SOMEONE HELP ME UNDERSTAND HOW I TAKE THIS REPORT AND START CREATING A COURSE?

Yes! Please reach out to Anchored Training to setup a call or meeting. Email: vanessa@anchoredtraining.com is the best place to reach us for inquiries and help walking through the program.

