

User Story:

Once upon a time, in a small town, a visionary company decided to build a new factory, which can make ecological fuel from microplastics gathered from the ocean. They had acquired a piece of land and were eager to create not just a factory, but an ecological community for their employees. In the beginning, the factory would employ twenty people: Two in management, one in marketing, five in research and development, eight factory workers, a janitor, a cleaner, and two kitchen staff. The company wanted to ensure that their employees and their families would have everything they needed. So, they planned to build apartments for those who needed temporary housing, to accommodate different needs and preferences. They also planned to build a grocery store, health care, a daycare and a sports center to make the workplace attractive for families. The company was committed to sustainability. They wanted work and living environments to be as ecologically sustainable as possible. They believed that a green, self-sufficient community would not only attract employees but also ensure they stayed happy and healthy. The project had a tight timeline. The company aimed to have everything ready in about 12 weeks. They knew it was ambitious, but they were determined to make it happen. They believed that with careful planning and hard work, they could create a thriving, sustainable community that would be a model for others to follow.

Initial Plan:

The ultimate objective is to create a sustainable facility capable of converting microplastics into eco-friendly fuel, while simultaneously developing an environmentally conscious residential community for employees and their families. The project is designed to be completed within a 12-week period using the Agile Scrum framework, deemed the most effective strategy for initial planning. The ownership of the project lies with Md Abdul Wazed, while Al Shariar Dhruba and Md Shafin Mazumder serve as developers, with Uzmatul Zannat Bushra acting as the Scrum Master.

Key Objectives:

Factory Establishment: Construct a production facility specializing in the transformation of microplastics into sustainable fuel.

Community Amenities: Develop employee accommodations, including residential apartments, a grocery store, healthcare services, childcare facilities, and a recreational sports center.

Staff Recruitment and Induction: Hire personnel for various roles such as management, marketing, research and development, factory operations, cleaning, and culinary services, while ensuring efficient onboarding processes.

Environmental Sustainability: Implement eco-conscious practices to ensure that both the factory and the residential community meet high sustainability standards.

Timely Execution: Deliver all project components within the predetermined 12-week schedule.

Product Backlog:

The product backlog contains all the activities required to achieve project completion.

Backlog Items:

Factory Setup:

- Finalize an environmentally friendly blueprint for the factory.
- Prepare the land and lay down the foundation.
- Install machinery for processing microplastics.
- Set up energy systems (e.g., solar panels, water recycling systems).
- Perform safety and functionality assessments.

Community Infrastructure:

- Design and construct temporary employee housing.
- Establish a grocery store for the community.
- Build a daycare center and a healthcare facility.
- Create a sports center for recreational purposes.
- Install essential utilities (electricity, water supply, internet access).

Sustainability Features:

- Plan and execute waste recycling and management strategies.
- Incorporate renewable energy systems (solar, wind power).
- Create community gardens and green areas.

Hiring and Onboarding:

- Recruit two managers, one marketing specialist, and five R&D personnel.
- Hire eight factory operators, one janitor, one cleaner, and two kitchen workers.
- Onboard and train all newly recruited staff.

Procurement and Setup:

- Acquire machinery and equipment for the factory.
- Purchase raw materials for production.
- Procure furniture and supplies for apartments and shared facilities.

Permits and Legal Compliance:

- Obtain environmental and construction permits.
- Ensure adherence to health and safety standards.
- Draft legal agreements for staff and suppliers.

Marketing and Community Engagement:

- Develop and execute a recruitment marketing plan.
- Communicate with local stakeholders about the project's environmental benefits.

Sprint Breakdown

Sprint 1 (Weeks 1–3): Setup and Initial Development

Sprint Goals:

- Prepare the land and initiate factory construction.
- Begin initial recruitment efforts.
- Finalize the designs for community housing and the grocery store.

Week 1 Planning:

- As the construction team, prepare the factory site for foundation work.
- As HR, hire key management and marketing staff to start planning operations.
- As a project team, complete the eco-friendly design of the apartments and grocery store.

Sprint Tasks - To Do:

- Clear the factory site and lay the foundation.
- Start construction of the factory building.
- Finalize sustainable designs for apartments and community infrastructure.
- Hire two managers and one marketing employee.
- Procure initial equipment for factory operations.
- Submit applications for building and environmental permits.

Expected Deliverables:

- Factory site cleared and foundation in place.
- Factory construction initiated.
- Key management and marketing personnel hired.
- Sustainable designs for apartments and grocery store completed.

Sprint 2 (Weeks 4–6): Construction and Intermediate Progress

Sprint Goals:

- Continue with factory construction.
- Begin work on community infrastructure.
- Expand hiring efforts.

Week 2 Planning:

- As construction workers, build the factory walls and install basic infrastructure for machinery.
- As HR, recruit the R&D team and factory workers for process planning.
- As the project team, start construction of apartments and shared community spaces.

Sprint Tasks - To Do:

- Complete the structural work on the factory (walls, roof, etc.).
- Install the initial production equipment in the factory.
- Begin construction of apartments and community spaces (grocery store, healthcare center).
- Recruit the R&D team and factory workers.
- Install basic utilities (electricity, water) for the factory and housing.

Expected Deliverables:

- Factory structure completed.
- Installation of initial machinery.
- Construction of apartments and shared facilities underway.
- Recruitment of R&D staff and factory workers.

Sprint 3 (Weeks 7–9): Operational Testing and Final Construction

Sprint Goals:

- Perform operational tests for the factory.
- Complete community infrastructure.
- Finalize recruitment and onboarding.

Week 3 Planning:

- As a project team, complete the factory setup and conduct testing of production systems.
- As construction workers, finish the community apartments, grocery store, and healthcare facilities.
- As HR, complete hiring of remaining staff and train them for their roles.

Sprint Tasks - To Do:

- Finish installing machinery and finalize factory setup.
- Conduct operational and safety testing.
- Complete construction of apartments, grocery store, daycare, and healthcare center.
- Recruit janitorial and kitchen staff.
- Train and onboard all remaining employees.

Expected Deliverables:

- Fully operational factory with successful testing.
- Community infrastructure completed.
- All staff hired and trained for their roles.

Sprint 4 (Weeks 10–12): Finalization and Launch

Sprint Goals:

- Conduct final tests and prepare for the official launch.
- Relocate employees to the community housing.
- Host the grand opening of the factory and community.

Week 4 Planning:

- As the project team, ensure all systems are fully operational for launch.
- As HR, relocate employees and their families to their new homes.
- As management, organize a grand opening ceremony to officially inaugurate the factory and community.

Sprint Tasks - To Do:

Complete the final testing of factory operations.

- Furnish and equip community facilities.
- Relocate employees and families into their housing.
- Host the grand opening event.

Expected Deliverables:

- Fully operational factory producing ecological fuel.
- Employees and families settled into the community.
- Official launch ceremony conducted.

Burndown Chart:**Progress Overview (Week 1–12):**

Week	Total Tasks (100)	Remaining Tasks
1	100	90
3	90	70
6	70	45
9	45	20
12	20	0

Explanation:

The chart begins with 100 total points, representing all tasks. Each sprint contributes to task completion, reducing the backlog incrementally. By week 12, all tasks are completed and the backlog reaches zero.

Flow chart of 12 weeks work plan

Task	Week 1 to Week 3	Week 4 to Week 6	Week 7 to Week 9	Week 10 to Week 11
Planning and initial setup	<ul style="list-style-type: none"> Get ready factory site and start construction Hiring staffs Application for permits 			
Construction and Intermediate Progress		<ul style="list-style-type: none"> Complete structural basic like roof, wall etc Start installing production equipment Hiring R&D and production worker Build grocery store 		
Operational Testing and Final Construction			<ul style="list-style-type: none"> Finalize factory setup Conduct trial run Provide training to all employees 	
Finalization and Launch				<ul style="list-style-type: none"> Complete final testing and production run Allocate employees their house and settled Arrange an official opening event





