Civil Engineering and You

Setting the stage: Calumet "K" by Merwin-Webster

by Ranjit S. Sahai, PE, F.ASCE

Calumet "K" inspires me to leap over seemingly unsurmountable hurdles. The novel was published in 1901. It is the story of Charlie Bannon, a construction manager, who knows what it takes to get things done in time, and proceeds to do so against all odds – be it a lack of transportation, corruption, insubordination, or other unforeseen events. Charlie is the epitome of an efficacious, thinking, problem solving mind – a portrayal so rare in modern fiction.

The project

Calumet "K" is a grain elevator that must be built by the midnight of December 31, if the grain trading company that commissioned it is to avoid ruin. (The color illustration of the grain elevator above was cropped from an image on the cover of the novel republished in the 1960s.)

The location

Calumet is a small town in the southern suburbs of Chicago, Illinois. Ledyard, Michigan, a town North East of Calumet and a major material supplier for the project is a day ride away by railroad.

Historical backdrop

US Steel becomes the first billion-dollar corporation in 1901. Railroads are the dominant mode of surface transportation. Concrete reinforced with twisted steel reinforcing bars is gaining traction for the construction of major structures such as skyscrapers and bridges. US stock market crashes for the first time in 1901.

What's to come

Starting with the September issue of this newsletter, this article provides a front row seat, spanning several issues, to the story of the construction of *Calumet "K,"* and Charlie's indomitable spirit.

About the author of this article

Ranjit, a Past President (2013–14) of ASCE-NCS, is a principal and founder of RAM Corporation, a firm serving State DOTs with a focus on traffic engineering design, stormwater facility inspections, and IT solutions for engineering workflows.

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The Abridged Calumet "K": Episode 1

The fascinating novel Calumet "K" by Samuel Merwin and Henry Webster was published in 1901. Its hero? A civil engineer!

The contract for the two-million-bushel grain elevator, *Calumet "K,"* had been let to MacBride & Company of Minneapolis in January, and at the end of October it was still far from completion. Having grown impatient, MacBride telegraphed Charlie Bannon to leave the job he was finishing in Duluth to supersede Peterson, the constructor.

Upon arrival, Bannon entered an office with dirty windows and a pile of unopened mail and asked the clerk where Peterson was. "He's out on the job somewhere," he said impatiently as Bannon set his bag down, studied the blueprints, and a moment later went out.

A squat little man, big headed, big handed, big footed, with bright red hair was superintending a gang of laborers moving timbers back from the adjacent railroad siding to make room for a big bill of cribbing that was over ten days late. Bannon asked for Peterson.

"He's up on the framing of the spouting house, over on the wharf there." About forty feet above the dock, across from the railroad tracks, Peterson expertly framed a corbel for the spouting house by himself, instead of the normal crew of three. No wonder the job was late, it was running itself as best as it could without the constructor's guidance or foresight. On his way to the office, Bannon systematized the confusion in one corner, showed another gang how to avoid handling the timber twice, and did a hundred little things to expedite work. Without formal assumption of authority, Bannon established his supremacy by simply knowing how.

Peterson was framing the spouting house by the wharf. [Illustration by Harry Edwards.]

A short while later, Peterson came into the office with Max Vogel, the squat little man with the bright red hair, to see Bannon writing letters and dictating responses to the unopened mail for the clerk to transcribe. "We need to have a stenographer out here, Pete."

Bannon spent the night with Peterson. Over dinner, Peterson asked Bannon if the office was concerned about progress on the job and explained he couldn't help it if the cribbing had been held up like that. "Look here Pete, it'll be November soon. The house has been promised for Page & Company to accept grain by the end of December. Cribbing or no cribbing, there is no getting around that. You're paid to direct the whole job, not to spend half a day laying corbels. Here today you had a dozen men throwing away their time moving a lot of timber that ought to have been put in the right place when it first came in."

Peterson was silent. Bannon asked how long it would take the cribbing to get here from Ledyard. "About two days." Next morning Bannon instructed Peterson to, soon after getting the job moving, have the electric company come and wire up the site in two days with arc lamps for nightshift as soon the cribbing arrived.

Bannon sat for a moment, then arose and looked at his watch. "I'm going to leave you, Pete," he said, as he put on his collar. "Where are you going?"

"I've got to get up to the city to make the ten o'clock train. I'm going up to Ledyard to get the cribbing. Be back in a couple of days." He put on his overcoat, said goodnight, and went out.

The project site and vicinity.

Novel's condensed text by

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The Abridged Calumet "K": Episode 2

The fascinating novel Calumet "K" by Samuel Merwin and Henry Webster was published in 1901. Its hero? A civil engineer!

Next morning at eight, Bannon walked into the office of the manager of the Ledyard Salt and Lumber Company and followed him out into the yard. The cribbing made a pile more than three hundred feet long. Its bulk was impressive. Bannon measured it with his eyes and whistled. "I wish it had been on our job ten days ago." "G&M have tied us up for these two weeks. I've kicked for cars, and so has old man Sloan, but here we are – can't move hand or foot."

"Who's Sloan?" "Oh, he's the whole thing. Owns the First National Bank, the trolley line, Ledyard Salt and Lumber Company and most of the downtown real estate." "Where can I find him?" "He's got an office across the river. Just ask anybody where the Sloan Building is." Bannon slipped his watch into his pocket. "Much obliged," he said, and turning, he walked rapidly away down the plank wagon road.

"We can't make the G&M give us cars. I guess we'll have to wait," said the magnate. "I can't wait. There's a reason why our job's got to be done on time. I want to know the reason why the G&M won't give you cars. It ain't because they haven't got them." "What makes you say that?" "Because there's three big strings of empties within twenty miles of here this minute. I saw them when I came up this morning." For a minute Sloan said nothing, only traced designs on the blotter with his pencil. Bannon saw that there was no longer any question of arousing his interest. "Where can I find anybody that knows anything?" "The G&M division offices are in Blake City. The train leaves in fifteen minutes. I'll drive you down."

Bannon came in about eleven o'clock. A telegraph operator outside the superintendent's office asked what his business was, but he answered merely that it was with the superintendent, and went in. "I'm Bannon, of MacBride & Company. All I want is cars." "I haven't got 'em." "There's a big string of empties on the siding at Victory." The superintendent looked out of the window and drummed on the desk. "Victory isn't in my division anyway." "Then wire the general manager and ask him if we can't possibly have those cars." The superintendent nodded to the operator. Momentarily, the telegraph receiver began giving the general manager's answer, which, knowing Morse code, Bannon decoded: "Obey previous instructions. Do not give Ledyard cars in any case. We don't help put up any grain elevator in Chicago these days."

This confirmed what Bannon had suspected. Someone wanted to prevent Page & Co. from delivering the vast amount of December wheat it had sold and would store in *Calumet "K"* before January 1.

Bannon had nearly an hour to wait for the next train back to Ledyard. He telegraphed MacBride & Company: "G&M wants to tie us up. Find out if Page will OK any bill of extras to bring cribbing down. If so, can they have one or more steam barges at Manistogee within forty-eight hours?" Two telegrams awaited Bannon when he arrived at Ledyard an hour later: "Get cribbing down. Page pays freight." and "Barge leaves Milwaukee tonight for Manistogee."

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The cribbing made a pile more than three hundred feet long.

[Photo credit: mbglick.com]

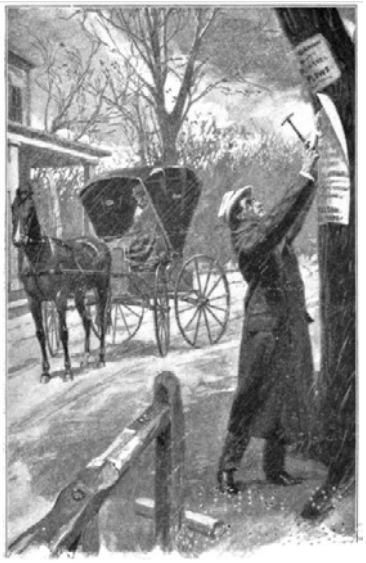
Two telegrams awaited Bannon when he arrived at Ledyard.

[Photo credit: telegraph-office.com]

The Abridged Calumet "K": Episode 3

The fascinating novel Calumet "K" by Samuel Merwin and Henry Webster was published in 1901. Its hero? A civil engineer!

Sloan cursed, "I'll have the law on those fellows...."



They stuck posters at every crossroads between Ledyard and Manistogee.

She did not look like the girl he had expected to see.

After dinner, Bannon went back to Sloan's office and told him what he had discovered. Sloan cursed, "I'll have the law on those fellows...." "And I'd get the stuff when I was likely enough dead." "What's the best way to get it?" "Take it over to Manistogee by wagons and then down by barges." Sloan snorted. "How are you going to get the barges?" "I've got one already. It leaves Milwaukee tonight." Sloan looked him over. "I wish you were out of a job," he said. Then abruptly he went on, "where are your wagons coming from? It'll take a lot of them."

"I know it. Well, we'll get all there are in Ledyard. The farmers round here, don't they think the railroad discriminates against them? I never saw a farmer yet that wouldn't grab a chance to get even with a railroad." "That's about right." "You get up a regular circus poster saying what you think of the G&M and call on the farmers to hitch up and drive to your lumber yard. We'll stick that up at every crossroads between here and Manistogee." Sloan scribbled text for a poster. Bannon read it and whistled. "It's grand," he said. "I never saw anything like it." Sloan telephoned the *Eagle* office to print the poster on the front page of the Ledyard Evening Eagle and send the posters to his office to hang at every crossroad.

It was half past seven before Bannon and Sloan reached the Manistogee hotel. Bannon was gone nearly an hour as Sloan finished supper. "I've cinched the wharf," he said when he returned. Then they started back as they had come. The first of the wagons carrying the cribbing to the barge passed them by, then the stream of wagons became almost continuous.

It was nearly five o'clock when Bannon appeared at the grain elevator on Thursday and asked Pete if he had received his message about the two-thousand feet of lumber coming by boat, and what he had done about it. "Oh, we'll be ready for it, soon's it gets here." "Look here, Pete, that timber hasn't got any business out there on the wharf. We've got to have that room for the cribbing." "But it's five o'clock already. There's the whistle." Bannon said, "Offer the men double pay, and tell them that any man can go home that wants to, right now, but if they say they'll stay, they've got to see it through."

Max was starting back after the returning laborers when he said to Bannon, "You spoke about needing a stenographer the other day. I know a first-rate stenographer and bookkeeper; it's my sister."

Not a quarter of a mile away was a big steamer, ploughing slowly up the river. "Well," Bannon said, "we're in for it now. I never thought they'd make such time as this. We don't get any sleep till every piece of that cribbing is over at the annex, ready for business in the morning. I'll be at the office."

There was a light in the office. A girl was sitting on the stool, bending over a ledger and rapidly footing up columns. She did not look like the girl he had expected to see. To be sure her hair was red, but unlike Max's, it was of a dark, rich color. She was slender. "Miss Vogel? There wasn't any need of your working tonight."

"Yes. I wanted to look things over before starting in tomorrow. It hasn't been kept up very well," she presently said. "But it won't be hard, I think, to straighten it out."

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The Abridged Calumet "K": Episode 4

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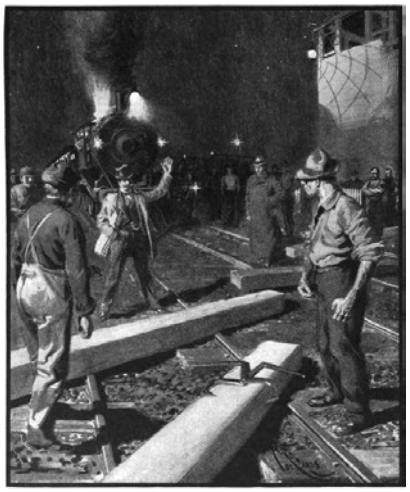
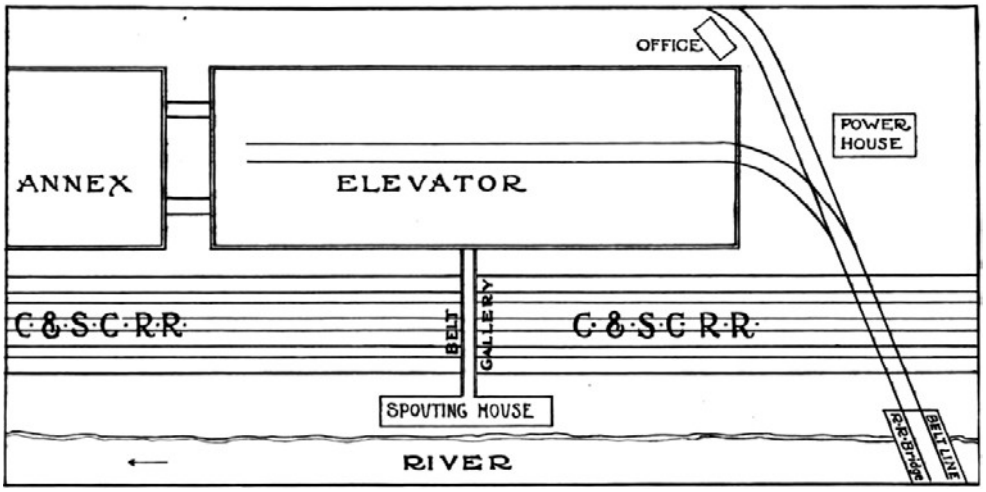


"When Peterson refused, Grady called the men off, just where they were."



"Get a wire cable off your hoisting engines and fasten one end as high as you can on the spouting house. We'll run it across the tracks," said Bannon.

"I guess you'd better go home, Miss Vogel. It's after nine o'clock." Bannon bade Miss Vogel a good night and hurried back to the job site. There was no sign of activity, though the two arc lamps were still in place. He followed the path beside the elevator and on around the end. A long line of timbers lay end to end across the tracks, where they had been dropped by the laborers, who were lounging around waiting for the order to move on. Bannon started forward when Max, who had been hurrying over to him, touched his arm. "What's all this Max?"

"I'm glad you've come. It's Grady, the walking delegate." "What's the trouble?"

"First, he wanted to know how much we were paying the men for night work, and I told him. Then he said we were working the men too hard; we'd have to put ten more men on the heavy sticks and eight on the others. When Petersen refused, Grady called the men off, just where they were. He wouldn't let them lift a finger."

The delegate was reveling in his authority. Bannon was beginning to see that Grady was more eager to make trouble than to uphold the cause of the men he was supposed to represent. Knowing the power of the unions, and that a rash step now might destroy all hope of completing the elevator on time, Bannon asked Grady what he wanted. "These gangs ought to be relieved every two hours." "I'll do it." Bannon started the gangs at work. Then he went over to the wharf to see how much timber remained on the steamer at the dock. Bannon walked back to the tracks in time to see the section boss of the C & SC railroad come up the track to hand him telegraphed orders prohibiting the movement of timbers across the tracks.

"What'll we do?" Peterson asked. "Get a wire cable off your hoisting engines and fasten one end as high as you can on the spouting house. We'll run it across the tracks," said Bannon. Half an hour had gone before the cable could be stretched from the spouting house, high over the tracks, down to the elevator structure.

Before the last plank from the steamer's cargo had been tossed on the pile by the annex, the first faint color was spreading over the eastern sky, and the damp of the low-country morning was in the air.

Bannon came on the job early next morning and looked through the doorway at the square mass of elevator that stood out against the sky like some gigantic, unroofed barn. The walls rose nearly eighty feet from the ground, so close to the top of the tops of the posts that were to support the cupola frame that Bannon's eyes spoke of satisfaction. He meant to hide those posts behind the rising walls of the cribbing before the day was gone.

Miss Vogel was at work on the ledger when Bannon entered the office. She looked up, smiling. "Can you drop it long enough to take a letter or so?" "Oh, yes." Bannon dictated a letter to MacBride & Co. noting that the timber was ready for framing the cupola, two hundred thousand feet had arrived last night, and the balance would be down in a few days.

Miss Vogel turned on her stool and asked, "I don't understand it, Mr. Bannon. How did you get the cribbing down without cars?" Her interest in the work pleased Bannon. He told her about Sloan, the trip to Blake City, and the farmers carrying the cribbing on wagons to Manistogee to a barge by the lake.

The annex was growing slowly but surely, and Peterson, with his sleeves rolled up, was at work with the men, swinging a hammer here, impatiently shouldering a bundle of planks there. Bannon saw more clearly what he had known before, that Peterson was a good man when kept within his limitations. The annex could not have been better started.

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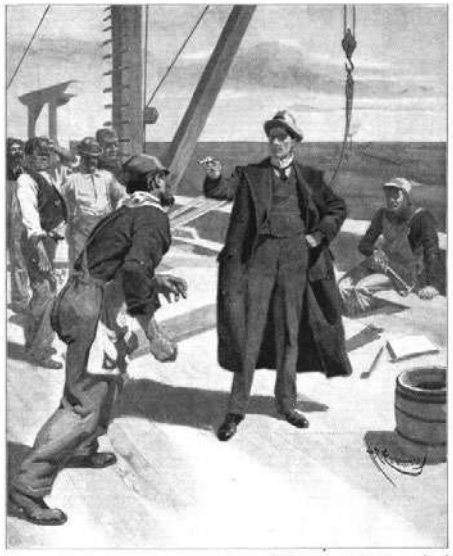
The Abridged Calumet "K": Episode 5

The fascinating novel Calumet "K" by Samuel Merwin and Henry Webster was published in 1901. Its hero? An efficacious engineer.

Since his first day on the job the attitude of the men had worried Bannon a little. There was something in the air he did not like. Peterson, accustomed to handling smaller bodies of men, had made the natural mistake of driving the very large force employed on the elevator with much too loose a rein. The men were still further demoralized by the episode with the walking delegate, Grady, on Thursday night. Bannon knew too much to attempt halfway measures, so he waited for a case of insubordination serious enough to call for severe treatment.

In the office about the middle of Saturday morning, Miss Vogel handed Bannon two letters. The one from Brown stated that Page & Co. were fighting to break the corner in December wheat. To do so, they needed to store 22,000 bushels of wheat in Calumet K before January 1, no matter what the cost. The other from Sloan advised Bannon that the remainder of the cribbing would be in Chicago within a week. Bannon got up, buttoned his coat and said to Miss Vogel, "Well, I've got to go out on the job."

An elevator is a giant warehouse of bins to store grain. The cupola, which Bannon was about to frame, is a five-story building perched atop the bins to house machinery to weigh and distribute the grain. When Bannon climbed out on top of the bins, he found carpenters preparing the flooring for the cupola framework. Below the bins, like bees in a honeycomb, laborers were taking



"I've talked to you," he said, "and I've knocked you down. But..."

down scaffolding that had been used to build the bins. At the south of the building, a group of laborers was rigging a boom hoist to lift timbers for framing the cupola.

While Bannon stood watching, one of the carpenters sawed off the end of a plank and dropped it down into the bin. There was a low laugh, and one or two of the men glanced uneasily at Bannon. He spoke to the offender. "Don't do that again if you want to stay on this job." Then: "Look here," he called, getting the attention of all the carpenters, "every-man that drops anything into the bins gets docked an hour's pay. If he does that twice, he leaves the job just as quick as we can make out a time-check. I want you to be careful."

He was picking his way over to the group of men about the hoisting pole, when a fellow named Reilly, who, trying to suppress a smile, was peering with mock concern down into the dark bin. "My hammer slipped," Bannon heard him say in a loud aside to the man nearest him. Then, with a laugh: "Accidents will happen."

"I guess we won't take the trouble to dock you," Bannon said. "Go to the office and get your time." "Not me. My hammer just slipped. How're you going to prove I meant to do it?" "I'm not. You ain't laid off, you understand; you're fired." "You don't dare fire me," the man said, coming nearer. "You can't come it on the union that way." Then, without any preparatory gesture whatever, Bannon knocked him down. The man seemed to fairly rebound from the floor. He rushed at the boss, but before he could come within striking distance, Bannon whipped out a revolver and dropped it level with Reilly's face. "I've talked to you," he said slowly, his eye blazing along the barrel, "and I've knocked you down. But..." The man staggered back, then walked away very pale, but muttering. Bannon shoved back the revolver into his hip pocket. "It's all right, boys," he said, "nothing to get excited about."

Bannon called Pete and Max to office and showed them the letter from the

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The Abridged Calumet "K": Episode 5

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office. At the current pace of work he estimated 120 days to complete the job. "That takes us to March 1," said Max. "You haven't divided by three yet," said Bannon. "We'll get three eight-hour days in 24-hours, and 21 of 'em into every week." "Why, that gets us two weeks ahead of time," said Pete. "I'm figuring on it as our hard luck margin. We'll have a strike here and Page & Co. are likely to spring something on us before we get through," said Bannon.

Five minutes after the noon whistle blew, on Saturday, every carpenter and laborer knew that Bannon had "pulled a gun" on Reilly. And every man, during the afternoon, kept his eyes more closely on his work. Some were angry, but these dropped from muttering into sullenness; the majority were relieved, for a good workman is surer of himself under a firm than under a slack hand; but all were cowed. And Bannon knew too, that the incident might in the long run make trouble. But trouble was likely in any case, and it was better to meet it after he had established his authority than while discipline was at loose ends.

One morning, after dictating letters to Hilda, Bannon asked, "You haven't been on the job yet, have you?" "No, I haven't." "Now that we're framing the cupola, the view ain't bad," he went on, "when you get up there. You can see down into Indiana, and all the way around." "Why Mr. Bannon," she said; I'd like to go very much."

As Bannon reached the elevator and began to climb the ladder, halfway up he met Max, who was coming down, time-book in hand. "I've asked your sister to come up and see the framing," said Bannon. Max glanced down at the loose boards on the landing. "I don't know," he said, "I don't believe she could climb up here very well." "She won't have to. You're going to build a passenger elevator between now and thee o'clock that's big and strong enough to carry her." Max grinned. "Say, that's alright. She'll like that. I can build most of it at noon.

Bannon inspected the "elevator" and the tackle that would carry it up, soon after the afternoon work started. "You better go for your sister," said Bannon.

"Well, Miss Vogel, how do you like it?" asked Bannon after they reached the top. She was looking eagerly about; at the frame, a great skeleton of new timber, some of it still holding so much of the water of river and millyard that it glistened in the sunlight; at the moving groups of men; at the straining hoist, trembling with each new load that came swinging from somewhere below, to be hustled off to its place, stick by stick; and then out into the west, where the November sun was dropping, and around at the hazy flats and the strip of a river. She drew in her breath quickly and looked up at Bannon with a nervous little gesture. "I like it," she said.

The next day a lot of cribbing came from Ledyard, and Bannon at once set about reorganizing his forces so that work could go on night and day.

It took a few days to get the new system running smoothly – new carpenters and laborers had to be taken on, and new foremen worked into their duties – but it proved to be less difficult than Max and Hilda had supposed from what Peterson had to say about the conduct of the work. The men all worked better than before; each new move of Bannon's seemed to infuse more rigor and energy into the work; and the cupola and annex began rapidly, as Max said, 'to look like something." Bannon was on hand all day, and frequently during a large part of the night. He had a way of appearing at any hour to look at the work and keep it moving. Max, after hearing the day men repeat what the night men had to tell of the boss and his work, said to his sister: "Honest, Hilda, I don't see how he does it. I don't believe he ever takes his clothes off."

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Employment Clearinghouse

The NCS provides the Employment Clearinghouse as a free service to its membership. The Clearinghouse allows members to post short notices for available positions or candidates seeking employment. All employers listed herein are equal opportunity employers. If you have questions, are seeking employment or would like to post a position please contact the newsletter editor.

Dr. Z's Corner, continued

and waste. Can emissions not only be reduced but reversed? Can waste be reused with minimal energy inputs? Can buffer capacities of the soil be restored? Can we not only reduce CO2 emissions, but reabsorb excess CO2 without creating new unwanted side effects?

In other words, we need a new concept of economic activity that shifts our focus from sources to sinks and the value these sink functions create. Such a sustainable economy will increase efficiency so fewer inputs can result in the same or higher output levels of goods and services; it will reduce emissions and waste resulting from the production and consumption of these goods and services; and it will restore and improve the ecosystems services that deliver the sink capacities necessary to process emissions and waste and maintain the health and vitality of our physical and social environment. Such a new economy will certainly require circular designs and systems approaches.

Food is a good place to start. At the University of the District of Columbia and its College of Agriculture, Urban Sustainability and Environmental Sciences (CAUSES) we launched an Urban Food Hubs model that creates small scale circular food systems consisting of (1) food production, (2) food preparation, (3) food distribution, and (4) closing the loop through waste and water management. The urban food hubs are ideally located in neighborhoods that lack access to fresh food. They model a circular, decentralized food system that can supplement rural production with greens, tomatoes, peppers and ethnic crops so that the most perishable and nutrient rich food plants can be produced right where the majority of consumers live. I invite you to join in this journey of re-envisioning such a circular, decentralized economy that understands how nature works, and how people live well – one community and one product at a time. It's the smart economy of the future!

About the Author

Sabine O'Hara, is Distinguished Professor and Program Director of the PhD in Urban Leadership and Entrepreneurship in the College of Agriculture, Urban Sustainability and Environmental Sciences (CAUSES) at the University of the District of Columbia (UDC). As founding dean of CAUSES she led UDC's efforts in building a cutting edge model for urban agriculture that improves urban sustainability and the quality of life of urban communities.

The Abridged Calumet "K": Episode 6

The fascinating novel Calumet "K" by Samuel Merwin and Henry Webster was published in 1901. Its hero? An efficacious engineer.

On Wednesday of the week after the Reilly incident, Bannon found an agent from the carpenters' union in his office.

"You probably know why I've come," the agent began. "Mr. Reilly has charged you with treating him unjustly and with drawing a revolver on him. Of course, in a case like this, we try to get at both sides before we take any action. Would you give me your account of it?"

Bannon told in twenty words just how it had happened. The agent said cautiously: "Reilly told another story."

"I suppose so. Now, I don't ask you to take my word against his. If you'd like to investigate the business, I'll give you all the opportunity you want."

"If we find that he did drop the hammer by accident, would you be willing to take him back?"

Bannon smiled. "There's no use in my telling you what I'll do till you tell me what you want me to do, is there?"

Bannon never heard whether the agent from the carpenters' union had looked further into Reilly's case, but he was not asked to take him back on the payroll.

The new night work schedule at the elevator was more of a hardship to Peterson than to anyone else. With none of those pleasant little momentary interruptions that used to occur in the daytime was mere unrelieved drudgery, but the afternoons, when he had given up trying to sleep any longer, were tedious enough to make him long for six o'clock.

Being gregarious in disposition, he hadn't cultivated the habit of thinking, and his time alone led to brooding. From the beginning he had been hurt that Bannon had been sent to supersede him, and with plenty to do and in Bannon's company every hour of the day he hadn't had time to think. But now he thought of little else, and as time went on, he succeeded in twisting nearly everything the new boss had said or done to fit his theory that Bannon was jealous of him and was trying to take from him the credit which rightfully belonged to him.

About four o'clock one afternoon, Peterson sat on the steps of his boarding-house, trying to make up his mind what to do. Glancing up, he saw Grady, the walking delegate, coming along the sidewalk.

"The elevator is coming right along. Mr. Bannon is a fine man," said Grady who had seated himself on the step below Peterson. "He's a good hustler," said Peterson. "Well, that's what passes for a fine man these days. But how does it happen that you're not down there

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The Abridged Calumet "K": Episode 6

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superintending? I hope some carpenter hasn't taken it into his head to fire the boss." Grady was shaking his head solemnly. "Oh, no, I ain't quite laid off – yet. He's put me in charge of the night shift." "I suppose some rich man is in a hurry for it and you must do your best to accommodate him."

"You bet, he's in a hurry for it. Says the bins have got to be chock full of grain before January first, no matter what happens to us. He don't care how much it costs, either."

"I must be going along," said Grady, getting to his feet. "That man must be in a hurry. January first! That's quick work, and he don't care how much it costs him. Oh, these rich devils! Well, goodnight to you."

When, about an hour after his conversation with Grady, Peterson started down to the elevator to take command, he knew he ought to tell Bannon of his conversation with Grady. But his determination oozed away as he neared the office, and he decided to say nothing about it whatever. Nevertheless, ever since Grady had repeated the phrase: "He don't care what it costs him," Peterson had been uneasily aware that he had talked too much.

Grady went away jubilant from his conversation with Peterson, for it seemed that all the cards were in his hands. Men who were trying to accomplish the impossible feat of completing, at any cost, the great hulk on the river front before the first of January, would not be likely to stop to quibble at paying the five thousand dollars or so that Grady, who, as the business agent of his union was simply in masquerade, would like to extort.

Next week during his talk with Brannon at the office one evening, Peterson braced himself to tell the boss what Grady had said, but it was not till just as Bannon was going home that it finally came out. "Grady had come by to meet me and wanted to know if I was laid off, and I told him I was on the night shift. He wanted to know what we was in such a hurry about, working nights, and I said we had to be through by January first. Then he said he supposed it must be for some rich man who didn't care how much it cost him; and I said yes, it was."

"How'd it suit you to have all your laborers strike about now?"

Bannon was leaning on the rail, his face away from Peterson. After a while he spoke thoughtfully. "Well, that cinches it. I guess he meant to hold us up, anyway, but now he knows we're a good thing." Then he wheeled around to face Pete and said, "Why don't we pull together better? What is it you're sore about? I want to feel that I've got you with me. Come around in the afternoon if you happen to be awake, and fuss around and tell me what I'm doing wrong. I want to consult you about a good many things in the course of a day."

Pete's face was simply a lens through which one could see the feelings at work beneath, and Bannon knew that he had struck the right chord at last. "Sure," said Pete. "I never knew you wanted to consult me about anything, or I'd have been around before."

Friday afternoon Bannon received a note from Grady saying that if he had any regard for his own interests or for those of his employers, he would do well to meet the writer at ten o'clock Sunday morning at a certain downtown hotel. It closed with a postscript containing the disinterested suggestion that delays were dangerous, and a hint that the writer's time was valuable and he wished to be informed whether the appointment would be kept.

Bannon ignored the note, and all-day Monday expected Grady's appearance at the office. He did not come, but when Bannon reached his boarding-house about eight o'clock that evening, he found Grady in his room waiting for him. "I can't talk on an empty stomach," said the boss, cheerfully, as he was washing up. "Just wait till I get some supper." "I'll wait," said Grady, grimly. When Bannon came back to talk, he took off his coat and sat down astride a chair. "Let's get to business Mr. Grady."

"I'll get to it fast enough. And when I do you'll see if you can safely insult the representative of the mighty power of the honest workingman of this vast land. I hear you folks are in a hurry, Mr. Bannon and that you'll spend anything it costs to get through on time. How'd it suit you to have all your laborers strike about now? Don't that idea make you sick? Well, they will strike inside two days. Do you think it would be worth something to the men who hire you for a dirty slavedriver to be protected against a strike? Wouldn't they be willing to pay a round sum to get this work done on time? What do you say to five thousand as a fair sum?"

"They'd be willing to pay fully that to save delay," said Bannon, cheerfully.

Grady could not help looking crestfallen. It seemed then that he might have got fifty. "All right," he went on, "five thousand it is; and I want it in hundred-dollar bills." "You do!" cried Bannon, jumping to his feet. "Do you think you're going to get a cent of it? I might pay blackmail to an honest rascal who delivered the goods paid for. If I'd thought you were worth buying, I'd have settled it up for three hundred dollars and a box of cigars right at the start. That's about your market price. But as long as I knew you'd sell us out again if you could, I didn't think you were even worth the cigars. Get out of here." Bannon took the little delegate by the arm. He marched him to the head of the long, straight flight of stairs. Then he hesitated a moment. "I wish you were three sizes larger," he said.

At half-past eight next morning Bannon entered the outer office of R. S. Carver, president of the Central District of the American Federation of Labor and

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The Abridged Calumet "K": Episode 6

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walked into the president's office with as much assurance as though it had been his own. He shut the door after him. The president did not look up but went on cutting open his mail. "I'm Bannon from MacBride & Company of Minneapolis." "Sit down," said the president. "Are you superintending the work?" "Yes." "One of your foreman drew a revolver on a man?" "I did, myself." The president let a significant pause intervene before his next question. "What do you want with me?"

"I want you to help me out. It looks as though we might get into trouble with our laborers." "You've come to the wrong man. Mr. Grady is the man for you to talk with. He's their representative." "We haven't got on very well with Mr. Grady. The first time he came on the job he didn't know our rule that visitors must apply at the office, and we weren't very polite to him. He's been down on us ever since. We can't make any satisfactory agreement with him." Carver turned away impatiently. "You'll have to," he said, "if you want to avoid trouble with your men. It's no business of mine. He's acting on their instructions." "No, he isn't," said Bannon, sharply. "What they want, I guess, is to be treated square and paid a fair price. What he wants is blackmail."

"I've heard that kind of talk before. It's the same howl that an employer always makes when he's tried to bribe an agent who's active in the interest of the men, and got left at it. What have you got to show for it? Anything but just your say so?" Bannon drew out Grady's letter of warning and handed it to him. Carver read it through, then tossed it on his desk. "You certainly don't offer that as proof that he wants black mail, Mr. Bannon."

"That letter doesn't prove blackmail," said Bannon, "but it smells of it. And there's the same smell about everything Grady has done. Then by straining his neck and asking questions, he found out we were in a hurry, that the elevator was no good unless it was done by January first, and that we had all the money we needed. Look at it again. Why does he want to take both of us to Chicago on Sunday morning, when he can see me any time at my office on the job?" Bannon spread the letter open before Carver's face. "Why doesn't he say right here what it is he wants, if it's anything he dares to put in black and white? I didn't pay any attention to that letter; it didn't deserve any. And then will you tell me why he came to my room at night to see me instead of to my office in the daytime? I can prove that he did. Does all that look as if I tried to bribe him? Forget that we're talking about Grady and tell me what you think it looks like."

Carver was silent for a moment. "That wouldn't do any good," he said at last. "If you had proof that I could act on, I might be able to help you. But I don't see that I can help you as it is. I don't see any reason why I should."

"I'll tell you why you should. Because if there's any chance that what I've said is true, it will be a lot better for your credit to have the thing settled quietly. And it won't be settled quietly if we have to fight. It isn't very much you have to do; just satisfy yourself as to how things are going down there. See whether we're square, or Grady is. Then when the scrap comes on you'll know how to act. That's all. Do your investigating in advance. If you can't do it yourself, maybe some man you have confidence in would do it for you."

Carver drummed thoughtfully on his desk for a few minutes. Then he carefully folded Grady's letter and put it in his pocket. "I'm glad to have met you, Mr. Bannon," he said, holding out his hand.

Next morning while Bannon was opening his mail, a man came to the timekeeper's window and asked for a job as a laborer. "Guess we've got men enough," said Max. "Haven't we, Mr. Bannon?" The man put his head in the window. "A fellow down in Chicago told me if I'd come out here to Calumet K and ask Mr. Bannon for a job, he'd give me one."

"Are you good up high?" Bannon asked. The man smiled ruefully, and said he was afraid not. "Well, then," returned Bannon, "we'll have to let you in on the ground floor. What's your name?" "James." "Go over to the tool house and get a broom."

"Give him a check, Max."

Novel's condensed text by

Ranjit Sahai, ASCE-NCS Past President (2013–14), is a principal with RAM Corp serving State DOTs on projects in traffic engineering design, stormwater facility inspections, and information technology. ■

Employment Clearinghouse

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The NCS provides the Employment Clearinghouse as a free service to its membership. The Clearinghouse allows members to post short notices for available positions or candidates seeking employment. All employers listed herein are equal opportunity employers. If you have questions, are seeking employment or would like to post a position please contact the newsletter editor.

The Abridged Calumet "K": Episode 7

The fascinating novel Calumet "K" by Samuel Merwin and Henry Webster was published in 1901. Its hero? An efficacious engineer.

Dreaming of a Winter Vacation

On the twenty-second of November Bannon received this telegram: *We send today complete drawings for marine tower which you will build in the middle of spouting house. Harahan Company are building the Leg.*

Bannon read it carefully, folded it, opened it, and read it again, then tossed it on the desk. "We're off now, for sure," he said to Miss Vogel. "I've known that was coming sure as Christmas."

Hilda picked it up. "Is there an answer, Mr. Bannon?" "No, just file it. Do you make it out?" She read it and shook her head. Bannon ignored her cool manner. "It means that we're going to have the time of our lives for the next few weeks. I'm going to carry compressed food in my pockets, and when mealtime comes around, just take a capsule."

"I think I know," she said slowly; "a marine leg is the thing that takes grain up out of ships. And we've been building a spouting house instead to load it into ships. But why do they want the marine leg?" she asked, "any more now than they did at first?"

"They've got to get the wheat down by boat and by rail, that's all. Both sides have got big men fighting. You've seen it in the papers, haven't you?" She nodded.

The next morning's mail brought the drawings and instructions; and with them came a letter from Brown to Bannon. "I suppose there's not much good in telling you to hurry," it ran; "but if there is another minute a day you can crowd in, I guess you know what to do with it. Page told me today that this elevator will make or break them. Mr. MacBride says that you can have all January for a vacation if you get it through. We owe you two weeks off, anyhow, that you didn't take last summer."

Bannon read it to Hilda, saying as he laid it down: "That's something I like." He turned the letter over in his hand. "I might go up on the St. Lawrence," he went on. "That's the only place for spending the winter that ever struck me when I was on a job there. Were you ever there?" he asked. "No, I've never been anywhere but home and here, in Chicago." "Where is your home?" "It was up in Michigan. That's where Max learned the lumber business. But he and I have been here for nearly two years."

"Well," said Bannon, "some folks may think it's cold up there, but there ain't anywhere else to touch it. It's high ground, you know, nothing like this," he swept his arm about to indicate the flats outside, "and the scenery beats anything this side of the Rockies. It ain't that there's mountains there, you understand, but it's all big and open, and they've got forests there that would make your Michigan pine woods look like weeds on a sandhill. And the river's great. You haven't seen anything really fine till you've seen the rapids in winter. The people there have a good time too. They know how to enjoy life."

She looked up. Her eyes were sparkling as they had sparkled that afternoon on the elevator when she first looked out into the sunset. "Yes," she replied. "I think I know what you mean." Bannon turned half away, as if to go. "You'll have to go down there, that's all," he said abruptly. He looked back at her over his shoulder, and added, "That's all there is about it."

Her eyes were half startled, half mischievous, for his voice had been still less impersonal than before. Then she turned back to her work, her face sober, but an amused twinkle lingering in her eyes. "I should like to go," she said, her pencil poised at the top of a long column. "Max would like it, too."

A Looming Strike

It was the night of the tenth of December. Three of the four stories of the cupola were building, and the upright posts were reaching toward the fourth. It still appeared to be a confused network of timbers, with only the

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Upcoming Events

Until further notice, all in-person ASCE NCS events have been cancelled. Opportunities for virtual events will be announced as they are planned.

Newsletter

Maria Raggousis, *Editor*

June 2021 Issue Deadline: May 21, 2021

To Submit Articles: newsletter@asce-ncs.org

NCS eNewsletter Archives: go to www.asce-ncs.org and view along the sidebar.

Address Changes: Call 1-800-548-ASCE, e-mail member@asce.org, visit www.asce.org, or write: ASCE – Membership, 1801 Alexander Bell Drive, Reston, VA 20191. Include your membership number.

National Capital Section

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Committee Chairs

Please refer to the NCS website for a current list of NCS committees and chairs.

The Abridged Calumet "K": Episode 7

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beginnings of walls, but as the cupola walls are nothing but a shell of light boards to withstand the wind, the work was further along than might have been supposed.

A little after eight o'clock Max saw Grady looking about the distributing floor and up through the girders overhead, with quick, keen eyes. Max understood what it all meant: Grady had chosen a time when Bannon was least likely to be on the job. It meant mischief – Max could see that; and he felt a boy's nervousness at the prospect of excitement. He stepped farther back into the shadow. Grady was looking about for Peterson; when he saw his burly figure outlined against a light at the farther end of the building, he walked directly toward him, not pausing this time to talk to the laborers or to look at them. Max, moving off a little to one side, followed, and reached Peterson's side just as Grady, his hat pushed back on his head and his feet apart, was beginning to talk.

"I stand here, Mr. Peterson, the man chosen by these slaves of yours, to look after their rights. I do not ask you to treat them with kindness, I do not ask that you treat them as gentlemen. What do I ask? That's the last stick of timber that goes across this floor until you put a runway from the hoist to the end of the building. And every stick that leaves the runway has got to go on a dolly. Mark my words now – I'm talking plain. My men don't lift another pound of timber on this house – everything goes on rollers." He pulled out his watch. "At ten o'clock, if your runway and the dollies ain't working, the men go out." He turned away, waved to the laborers and walked grandly toward the stairway.

Max whistled. "I'd like to know where Charlie is," said Peterson. "He ain't far. I'll find him," and Max hurried away.

Bannon was sitting in the office chair with his feet on the drafting table, figuring on the back of a blotter. He did not look up when the door opened, and Max came to the railing gate. "Grady's been up on the distributing floor," said Max, breathlessly, for he had been running.

"What did he want?"

"He's going to call the men off at ten o'clock if we don't put in a runway and dollies on the distributing floor."

Bannon looked at his watch. "Is that all he wants?" Max, in his excitement, did not catch the sarcasm in the question. "That's all he said, but it's enough. We can't do it."

Bannon closed his watch with a snap. "No," he said, "and we won't throw away any good time trying. You'd better round up the committee that's supposed to run this lodge and send them here. That young Murphy's one of them. Bring Pete back with you, and the new man, James."

Max lingered, with a look of awe and admiration. "Are you going to stand out, Mr. Bannon?" he asked. Bannon dropped his feet to the floor and turned toward the table. "Yes," he said. "We're going to stand out."

Judgement Day

Since Bannon's talk with President Carver a little drama had been going on in the local lodge, a drama that neither Bannon, Max, nor Peterson knew about. James had been selected by Carver for this work because of proved ability and shrewdness. He had no sooner attached himself to the lodge, and made himself known as an active member, than his personality, without any noticeable effort on his part, began to make itself felt. Up to this time Grady had had full swing, for there had been no one among the laborers with force enough to oppose him.

The first collision took place at an early meeting after Grady's last talk with Bannon. The delegate, in the course of the meeting, bitterly attacked Bannon, accusing him, at the climax of his oration, of an attempt to buy off the honest representative of the working classes for five thousand dollars.

This had a tremendous effect on the excitable minds before him. He finished his speech with an impassioned tirade against the corrupt influences of the money power, and was mopping his flushed face, listening with elation to the hum of anger that resulted, confident that he had made his point, when James arose.

The new man was as familiar with the tone of the meetings of laborers as Grady himself. At the beginning he had no wish further than to get at the truth. Grady had not stated his case well. It had convinced the laborers, but to James it had weak points. He asked Grady a few pointed questions, that, had the delegate felt the truth behind him, should not have been hard to answer. But Grady was still under the spell of his own oratory, and in attempting to get his feet back on the ground, he bungled.

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The Abridged Calumet "K": Episode 7

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James did not carry the discussion beyond the point where Grady, in the bewilderment of recognizing this new element in the lodge, lost his temper, but when he sat down, the sentiment of the meeting had changed.

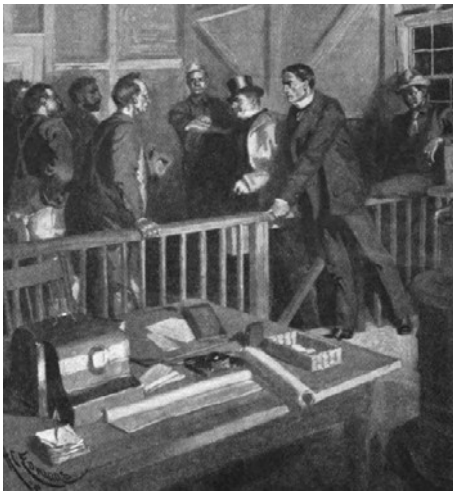
Few of those men could have explained their feelings; it was simply that the new man was stronger than they were, perhaps as strong as Grady, and they were influenced accordingly. There was no decision for a strike at that meeting. Grady, cunning at the business, was determined to carry through the strike without the preliminary vote of the men.

Bannon did not have to wait long. Soon there was a sound of feet outside the door, and after a little hesitation, six laborers entered, five of them awkwardly and timidly, wondering what was to come. Peterson followed, with Max, and closed the door.

The members of the committee stood in a straggling row at the railing, looking at each other and at the floor and ceiling – anywhere but at the boss, who was sitting on the table, sternly taking them in. James stepped to one side. "Is this all the committee?" Bannon presently said. The men hesitated, and Murphy, who was in the center, answered, "Yes, sir." "You are the governing members of your lodge?" There was an air of cool authority about Bannon that disturbed the men. So, they looked at the floor and ceiling again, until Murphy at last answered: "Yes, sir."

Bannon waited again, knowing that every added moment of silence gave him the firmer control. "I have brought you here to ask you this question: Have you voted to strike?"

The silence was deep. Peterson, leaning against the closed door, held his breath; Max, sitting on the railing with his elbow thrown over the desk, leaned slightly forward. The eyes of the laborers wandered restlessly about the room. They



If you hang on this man after he's been proved a blackmailer, your lodge can be dropped from the Federation.

were disturbed, taken off their guard; they needed Grady. But the thought of Grady was followed by the consciousness of the silent figure of the new man, James, standing behind them. Murphy's first impulse was to lie. Perhaps, if James had not been there, he would have lied. As it was, he glanced up two or three times, and his lips as many times framed themselves about words that did not come. Finally, he said, mumbling the words: "No, we ain't voted for no strike." "There has been no such decision made by your organization?" "No, I guess not."

Bannon turned to Peterson. "Mr. Peterson, will you please find Mr. Grady and bring him here." Max and Peterson hurried out together. Bannon drew up the chair, and turned his back on the committee, going on with his figuring. Not a word was said; the men hardly moved; and the minutes went slowly by.

Then there was a stir outside, and the sound of low voices. The door flew open, admitting Grady, who stalked to the railing, choking with anger. Max, who immediately followed, was grinning, his eyes resting on a round spot of dust on Grady's shoulder, and on his torn collar and disarranged tie.

Peterson came in last, and carefully closed the door – his eyes were blazing, and one sleeve was rolled up over his bare forearm. Neither of them spoke.

Grady was at a disadvantage, and he knew it. Breathing hard, his face red, his little eyes darting about the room, he took it all in – the members of the committee; the boss, figuring at the table, with an air of exasperating coolness about his lean back; and last of all, James, standing in the shadow. It was the sight of the new man that checked the storm of words that was pressing on Grady's tongue. But he finally gathered himself and stepped forward, pushing aside one of the committee.

Then Bannon turned. He faced about in his chair and began to talk straight at the committee, ignoring the delegate. "This

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The Abridged Calumet "K": Episode 7

continued from page 4

man Grady threatened a good while ago that I would have a strike on my hands. He finally came to me and offered to protect me if I would pay him five thousand dollars."

"That's a lie!" shouted the delegate.

"He came to me" Bannon had hardly paused. He drew a typewritten copy of Grady's letter from his pocket, and read it aloud, then handed it over to Murphy. "Tonight he's ordered a strike. He calls himself your representative, but he has acted on his own responsibility. Now, I am going to talk plain to you. I came here to build this elevator, and I'm going to do it. I propose to treat you men fair and square. If you think you ain't treated right, you send an honest man to this office, and I'll talk with him. But I'm through with Grady. If you send him around again, I'll throw him off the job."

"I laid this matter before President Carver," continued Bannon, "I have his word that if you hang on to this man after he's been proved a blackmailer, your lodge can be dropped from the Federation. If you try to strike, you won't hurt anybody but yourselves. That's all. You can go."

"Wait" Grady began, but they filed out without looking at him.

James, as he followed them, nodded, and said, "Good night, Mr. Bannon."

Then for the last time Bannon led Grady away. "Now, Mr. Grady," he said, "this is where our ground stops. The other sides are the road there, and the river, and the last piles of cribbing at the other end. I'm telling you so you will know where you don't belong. Now, get out!"

Novel's condensed text by

Ranjit Sahai, ASCE-NCS Past President (2013–14), is a principal with RAM Corp serving State DOTs on projects in traffic engineering design, stormwater facility inspections, and information technology. ■

Dr. Z's Corner

Civil Engineering & Artificial Intelligence (AI) Applications from Netherlands

This special issue of Dr. Z's Corner will be the last before we break for the summer. This month I've decided to surprise our readers and invited two well-known engineers and scholars from Europe. My guest authors, Dr. Eleni Smyrou and Dr. İhsan Engin Bal, work together as a husband and wife team and currently both are faculty at Hanze University of Applied Sciences Groningen, Netherlands. I hope you will enjoy their interesting article.

Introduction

Technology is evolving at an unprecedented speed, by transforming the society, politics, governance, and professions. Civil engineering is no exception.

Computers significantly changed the way structures are engineered. The method of Hardy Cross from the University of Illinois Urbana-Champaign, for example, was revolutionary in the 30s, enabling structural engineers to design and build taller structures until the 60s. Similarly, the elastic design spectrum, proposed by Nathan Newmark who is another professor at Urbana-Champaign, revolutionized the seismic design of structures starting from the 50s. The implementation of computerized methods in civil engineering, however, was a total game changer. Now 90 years after the first publication of the Cross Method, and more than 60 years after the proposal of the Newmark Spectrum, our structural design problems are more complex than ever.

Although the civil engineering discipline adapted well to the early changes of computerization, the adoption of emerging technologies in the new millennium is slow. The use of brute-force when using computers to analyze and design larger, taller and more complex structures has become the main exploitation area of technology in civil engineering. Furthermore, structures have become much more complex in the last few decades, requiring interface with other disciplines via technologies such as BIM (Building Information Modeling), which is another technological development that found a place in practice. Apart from those, and despite the extensive research, other emerging technologies did not actually revolutionize the design and construction processes, yet; though this may change in the coming years.

Things are changing recently, although slow and limited. Some new technology applications in civil engineering are evident in the last few years. The momentum in new technologies spreading through our daily routines, and the increasing societal and economic demands, are forcing the civil engineering discipline to adapt.

In this article, we discuss one of the major emerging technologies, "Artificial Intelligence", the magic word of the recent years.

What is AI?

Artificial Intelligence (AI) is a broader term that covers all sorts of applications where the intelligence is developed by a machine. Although the concept dates back to the 40s, everyday applications were only possible when the available computational power was enough to deploy large datasets for training models. This happened in the last several years,

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The Abridged Calumet "K": Episode 8

The fascinating novel Calumet "K" by Samuel Merwin and Henry Webster was published in 1901. Its hero? An efficacious engineer.

Putting Christmas off a week

The effect of the victory was felt everywhere. Not only were Max and Pete and Hilda jubilant over it, but the under-foremen, the timekeepers, even the laborers attacked their work with a fresher energy. It was like the first whiff of salt air to an army marching to the sea. Since the day when the cribbing came down from Ledyard, the work had gone forward with almost incredible rapidity; there had been no faltering during the weeks when Grady's threatened catastrophe was imminent, but now that the big shadow of the little delegate was dispelled, it was easier to see that the huge warehouse was almost finished. There was still much to do, and the handful of days that remained seemed absurdly inadequate; but it needed only a glance at what Charlie Bannon's tireless, driving energy had already accomplished to make the rest look easy.

When Charlie approached the summit of the marine tower where Pete was sledging down a tottering timber, Pete asked, "Ain't it time we was putting up the belt gallery?"

"There ain't three days' work in it, the way we're going," said Bannon thoughtfully, his eyes on the C. & S. C. right-of-way that lay between him and the main house, "but I guess you're right. We'll get at it now. There's no telling what sort of a surprise party those railroad fellows may have for us. The plans call for three trestles between the tracks. We'll get those up today." For Pete, the idea of building a 150-foot-long wooden box (belt gallery) held up 30-feet-high on three trestles, each consisting of four wooden posts and held together at the top with a corbel, was a formidable task. Bannon's nonchalant air of setting about it seemed almost an affectation.

In an incredibly short time, after Bannon gave the word, the fences were down and a swarm of men with spades, post augers, picks, and shovels had invaded the C. & S. C. right-of-way. Half an hour after the work was begun, Bannon saw a hand car spinning down the track as fast as six big, sweating men could pump the levers. The section boss had little to say; simply that they were to get out of there and put up that fence again, and the quicker the better. So, the posts were lugged out of the way and the fence was put up and the men scattered out to their former work again, grinning a little over Bannon's discomfiture.

Bannon wrote Minneapolis for information and instructions. MacBride, who had all the information, was out of town. After waiting a few days, Bannon spoke with MacBride from the telephone exchange. Porter, the railroad's vice president, had told MacBride they wouldn't object to building the gallery over their tracks. But not a word on paper. After three or four unsuccessful attempts to reach Porter, with wrath in his heart, Bannon started downtown. It was almost night when he came back, pulled a paper out of his pocket, and handed it to Hilda. "Read that." It was a formal permit for building the gallery, signed by Porter himself, and bearing the OK of the general manager. "Nice, isn't it?" Bannon commented. "Now read the postscript, Miss Vogel." It was in Porter's handwriting, and Hilda read it slowly. It forbade the erection of trestles or temporary scaffolding in the right-of-way, and the removal of any railroad property such as fences. Pete's face went blank. "A lot of good this darned permit does us then. That just means we can't build it." Bannon commented that's what Porter thought too. "I bet he's grinning yet," continued Bannon, "I wonder if he'll grin so much about three days from now."

"Do you mean that you can build it anyway?" Hilda demanded breathlessly. He nodded, and, turning to Pete, plunged into a swift, technical explanation of how the trick was to be done. "Won't you please tell me, too?" Hilda asked appealingly. "Sure," he said. He sat

It was a simple scheme

down beside her at the desk and began drawing on a piece of paper.

It was a simple scheme of Bannon's: the cantilever method of construction for a truss. A cable would be strung across the tracks, one end tied to the elevator and the other to the spouting house. The cable would be all the falsework

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they would need. As fast as the timbers were bolted together, the halves of the floor were shoved out over the tracks, each free end being supported by a rope which ran up over a pulley. The pulley was held by an iron ring fastened to the cable, but perfectly free to slide along it to accompany the end of the floor as it was moved outward.

With a day gone – fastening the cable and gathering timbers at each end – Bannon said they'd complete the gallery tomorrow. "Tomorrow," a man repeated. "We ain't going to work tomorrow, are we?" "Sure," he said. "Why not?" "It's Christmas." "Christmas!" he exclaimed, in perfectly honest astonishment. He ran his hand through his stubby hair. "Boys," he said, "I'm sorry to have to ask it of you. But can't we put it off a week? Look here. We need this day. Now, if you'll say Christmas is a week from tomorrow, I'll give every man on the job a Christmas dinner that you'll never forget; all you can eat and as much again, and you bring your friends, if we work tomorrow and we have her full of wheat a week from today. Does that go?"

It went, with a ripping cheer to boot. At four o'clock Christmas afternoon, the last bolt was drawn taught. The gallery was done.

Talkers and doers

Before December was half gone the newspaper-reading public knew all the outside facts about the fight in wheat, and they knew it to be the biggest fight since the days of "Old Hutch" and the two-dollar-a-bushel record. Indeed, there were men who predicted that the two-dollar mark would be reached before Christmas, for the Clique of speculators who held the floor were buying, buying, buying – millions upon millions of dollars were slipping through their ready hands, and still there was no hesitation, no weakening. Until the small fry had dropped out the deal had been confused; it was too big, there were too many interests involved, to make possible a clear understanding, but now it was settling down into a grim fight between the biggest men on the Board. The Clique were buying wheat – Page & Company were selling it to them: if it should come out, on the thirty-first of December, that Page & Company had sold more than they could deliver, the Clique would be winners; but if it should have been delivered, to the last bushel, the corner would be broken, and the Clique would drop from sight as so many reckless men had dropped before.

The general opinion was that Page & Company could not deliver and register such an enormous quantity of grain in time, even if they had the wheat. But the public overlooked, indeed it had no means of knowing, one important fact. The members of the Clique were new men in the public eye. They represented apparently unlimited capital, but they were young, eager, overstrung; flushed with the prospect of success, they were talking for publication. They believed they knew of every bushel in the country that was to be had, and they allowed themselves to say that they had already bought more than this. If this were true, Page was beaten. But it was not true. The young men of the Clique had forgotten that Page had trained agents in every part of the world; that he had alliances with great railroad and steamer lines, that he had a weather bureau and a system of crop reports that outdid those of the United States Government, that he could command more money than two such Cliques, and, most important of all, that he did not talk for publication.

The young speculators were matching their wits against a great machine. Page had the wheat, he was making the effort of his career to deliver it, and he had no idea of losing. Already millions of bushels had been rushed into Chicago. It was here that the fight took on its spectacular features, for the grain must be weighed and inspected before it could be accepted by the Board of Trade, and this could be done only in "regular" warehouses.

The struggle had been to get control of these warehouses. It was here that the Clique had done their shrewdest work, and they had supposed that Page was finally outwitted, until they discovered that he had coolly set about building a million-bushel annex to his new house, Calumet "K". And so it was that the newspapers learned that on the chance of completing Calumet "K" before the thirty-first of December hung the whole question of winning and losing; that if Bannon should fail, Page would be short two million bushels.

Young men with snapshot cameras waylaid Bannon on his way to luncheon.

And then came reporters and newspaper illustrators, who hung about the office and badgered Hilda, or perched on timber piles and sketched until Bannon or Peterson or Max could get at them and drive them out. Young men with snap-shot cameras waylaid Bannon on his way to luncheon, and published, with his picture, elaborate stories of his skill in averting a strike – stories that were not at all true.

Far out in Minnesota and Montana and South Dakota farmers were driving their wheat-laden wagons to the hundreds of local receiving houses that dotted the railroad lines. Box cars were waiting for the red grain, to roll it away to Minneapolis and Duluth – day and night the long trains were puffing eastward. Everywhere the order was, "Rush!" Railroad presidents and managers knew that Page was in a hurry, and they knew what Page's hurries meant, not only to the thousands of men who depended on him for their daily bread, but to the many great industries of the Northwest, whose credit and integrity were inextricably interwoven with his. Division superintendents knew that Page was in a hurry, and they snapped out orders and discharged half-competent men and sent quick words along the hot wires that were translated by despatchers and operators and yard masters into profane, driving commands. Conductors knew it, brakemen and switchmen knew it; they made flying switches in defiance of companies' orders, they ran where

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they used to walk, they slung their lunch pails on their arms and ate when and where they could, gazing over their cold tea at some portrait of Page, or of a member of the Clique, or of Bannon, in the morning's paper. Elevator men at Minneapolis knew that Page was in a hurry, and they worked day and night at shovel and scale. Steamboat masters up at Duluth knew it, and mates and deck hands and stevedores and dock wallopers – more than one steamer scraped her paint in the haste to get under the long spouts that waited to pour out grain by the hundred thousand bushels. Trains came down from Minneapolis, boats came down from Duluth, warehouse after warehouse at Chicago was filled; and over strained nerves neared the breaking point as the short December days flew by. Some said the Clique would win, some said Page would win; in the wheat pit, men were fighting like tigers; everyone who knew the facts was watching Charlie Bannon.

It was just at dusk, after leaving the men to take down the cable, that Bannon went to the office. "Hello," he said coming into the enclosure. Hilda looked up, and he saw that she was a little excited; her eyes always told him. They were silent for a time – silences were not so hard as they had been, a few weeks before – both thinking that this was Christmas night. She turned and said, "Is it done – the belt gallery?" He nodded. "All done. We'll have the wheat coming in tomorrow, and then it's just walking downhill."

"Well…" she smiled; and he nodded again. He paused and looked at the window, where the rain was streaking the glass. "I've been thinking about my vacation. I've about decided to go to the St. Lawrence." It was the personal tone again, coming into their talk in spite of the excitement of the day and the many things that might have been said. She saw the memory coming into his eyes, and she leaned back against the desk, playing with her pen, and now and then looking up. Bannon took to walking again; and Hilda stepped down and stood by the window, spelling out the word "Calumet" with her finger on the misty glass. At each turn, Bannon paused and looked at her. Finally, he stood still, not realizing that he was staring until she looked around, flushed, and dropped her eyes. Then he felt awkward, and he began turning over the blueprints on the table.

"If I can pick up some good pictures of the river, I'll send them to you, and you can write and tell me how things are going."

"Max and I don't do much of anything. Max studies at night – a man he used to work for gave him a book on civil engineering. And I read some, and then I like to learn things about – oh, about business, and how things are done."

Bannon could not take his eyes from her – he was looking at her hair, and at the curved outline of one cheek, all that he could see of her face. They both stood still, listening to the patter of the rain, and to the steady drip from the other end of the office, where there was a leak in the roof. Once she cleared her throat, as if to speak, but no words came.

"I'll tell you what you do – you come along with me." "Come – where?" "Up to the St. Lawrence. We can start on the third just the same." She did not answer, and he stopped. Then, after a moment, she slowly turned, and looked at him. "I guess that's pretty plain, isn't it – what I mean?" She leaned back against the wall and looked at him; it was as if she could not take her eyes from his face. "I just thought if you felt anything like I did, you'd know pretty well, by this time, whether it was yes or no." She was still looking at him. He had said it all, and now he waited, his fists knotted tightly, and a peculiar expression on his face, almost as if he were smiling, but it came from a part of his nature that had never before got to the surface. Then he said, "You don't mean that that you can't do it?" She shook her head without looking at him.

By noon of the thirtieth, an hour or two after MacBride and young Page arrived from Minneapolis, it became clear that they would be through in time. At eight o'clock next morning, as Bannon and MacBride were standing in the superintendent's office, he came in and held out his hand. "She's full, Mr. Bannon. I congratulate you." "Full, eh?" said MacBride. Then he dropped his hand on Bannon's shoulder. "Well," he said, "will you come and talk business with me for a little while?"

St. Lawrence? No, Indianapolis!

As soon as the last of the grain was in, on the thirty-first, Max took a northbound car and scoured South Chicago for a hall that was big enough. Before the afternoon was gone, he had found it, and had arranged with a restaurant keeper to supply the dinner. There was room for every man who had worked an hour on the job since the first spile had been driven home in the Calumet clay. To be sure most of the laborers had been laid off before the installing of the machinery, but Bannon knew that they would all be on hand, and he meant to have seats for them.

Early the next morning the three set to work, making long tables and benches by resting planks on boxes, and covering the tables with pink and blue and white scalloped shelf-paper. "Do you think Hilda would care to come around?" said Bannon. "You mean for her to help fix things up?" asked Max. "Yes," said Bannon. "I'll go get her, said Max." "Max," Bannon said, "hold on a minute." Max turned and came slowly back. "What are you going to do now, Max – when you're through on this job?" "Why – I don't know." "Have you got anything ahead?" "Nothing sure. I was working for a firm of contractors up on the North Side, and I've been thinking maybe they'd take me back." "You've had some experience in building before now, haven't you?" Bannon was speaking deliberately, as if he were saying what he had thought out before. "Yes, a good deal. It's what I've mostly done since I quit the lumber business." "When Mr. MacBride was here," said Bannon, "he told me that we've got a contract for a new house at Indianapolis. It's going to be concrete, from the spiles up – there ain't anything like it in the country. I'm going down next week to take charge of the job, and if you'd like to go along as my assistant, I'll take you." Max did not know what to say. At first, he grinned and blushed, thinking only that Bannon had been pleased with his work; then he grew serious. "Well," said Bannon, "what do you say?" Max still hesitated. At last, he replied: "Can I have till tomorrow to think about it? I – you see, Hilda and I, we most always talk things over, and I don't exactly like to do anything without…" "Sure," said Bannon; "think it over if you like. There's no hurry up to the end of the week."

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When Max and Hilda came in, Bannon and James were coming toward them, and she greeted them with a nod. "There's going to be plenty of room," she said. "That's right," Pete replied. "There won't be no elbows getting in the way at this dinner." He led the way to the platform, and they all followed. "This is the speaker's table," Pete went on, "where the boss and all will be" – he winked toward Bannon – "and the guest of honor. You show her how we sit, Max; you fixed that part of it." Max walked around the table, pointing out his own, Pete's, James', and Bannon's seats, and those of the committee. The middle seat, next to Bannon's he passed over. "Hold on," said Pete, "you forgot something." Max grinned and drew back the middle chair. "This is for the guest of honor," he said, and looked at Hilda. Pete was looking at her, too, and James – all but Bannon. The color, that had been leaving her face, began to come back. "Do you mean me?" she asked. "I guess that's pretty near," said Pete.

Bannon found opportunity to talk to her in a low voice, during the times when Pete was whistling, or was chaffing with the waiters. He told her, a few words at a time, of the new work Mr. MacBride had assigned to him, and in his enthusiasm, he gave her a little idea of what it would mean to him, this opportunity to build an elevator the like of which had never been seen in the country before, and which would be watched by engineers from New York to San Francisco. He told her, too, something about the work, how it had been discovered that piles could be made of concrete and driven into the ground with a pile driver, and that neither beams nor girders – none of the timbers, in fact – were needed in this new construction. He was nearly through with it, and still, he did not notice the uncertain expression in her eyes. It was not until she asked in a faltering under tone, "When are you going to begin?" that it came to him. And then he looked at her so long that Pete began to notice, and she had to touch his foot with hers under the table to get him to turn away. He had forgotten all about the vacation and the St. Lawrence trip.

Hilda saw, in her side glances, the gloomy expression that had settled upon his face; and she recovered her spirits first. "It's all right," she whispered; "I don't care."

"Will you go with me?" She did not look up, but her head nodded once with a little jerk. Bannon caught Max's signals to step out of hearing of the others and he went to join Max. Max made two false starts before he could get his words out in the proper order. "Say," he finally said; "I thought maybe you wouldn't care if I told James. He thinks you're all right; you know. And he says, if you don't care, he'd like to say a little something about it when he makes his speech. Not much, you know – nothing you wouldn't like – he says it would tickle the boys right down to their corns." Bannon looked around toward Hilda, and slowly shook his head. "Max," he replied, "if anybody says a word about it at this dinner I'll break his head."

That should have been enough, but when James' turn came to speak, after nearly two hours of eating and singing and laughing and riotous good cheer, he began in a way that brought Bannon's eyes quickly upon him. "Boys," James said, "we've worked hard together on this job, and one way and another we've come to understand what sort of a man our boss is. Ain't that right?" A roar went up from hundreds of throats, and Hilda, sitting next to Bannon, blushed. Bannon's hand groped for hers under the table. "We've thought we understood him pretty well, but I've just found out that we didn't know so much as we thought we did. He's been a pretty square friend to all of us, and I'm going to tell you something that'll give you a chance to show you're square friends of his, too." He paused, and then leaning forward with both hands on the table, and looking straight down on the long rows of bearded faces, "how about this, boys? Shall we stand it?" "No!" was the reply in chorus. "All right, then. Three cheers for Mr. Bannon. Now – Hip, hip..." There was no stopping that response.

Novel's condensed text by

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